

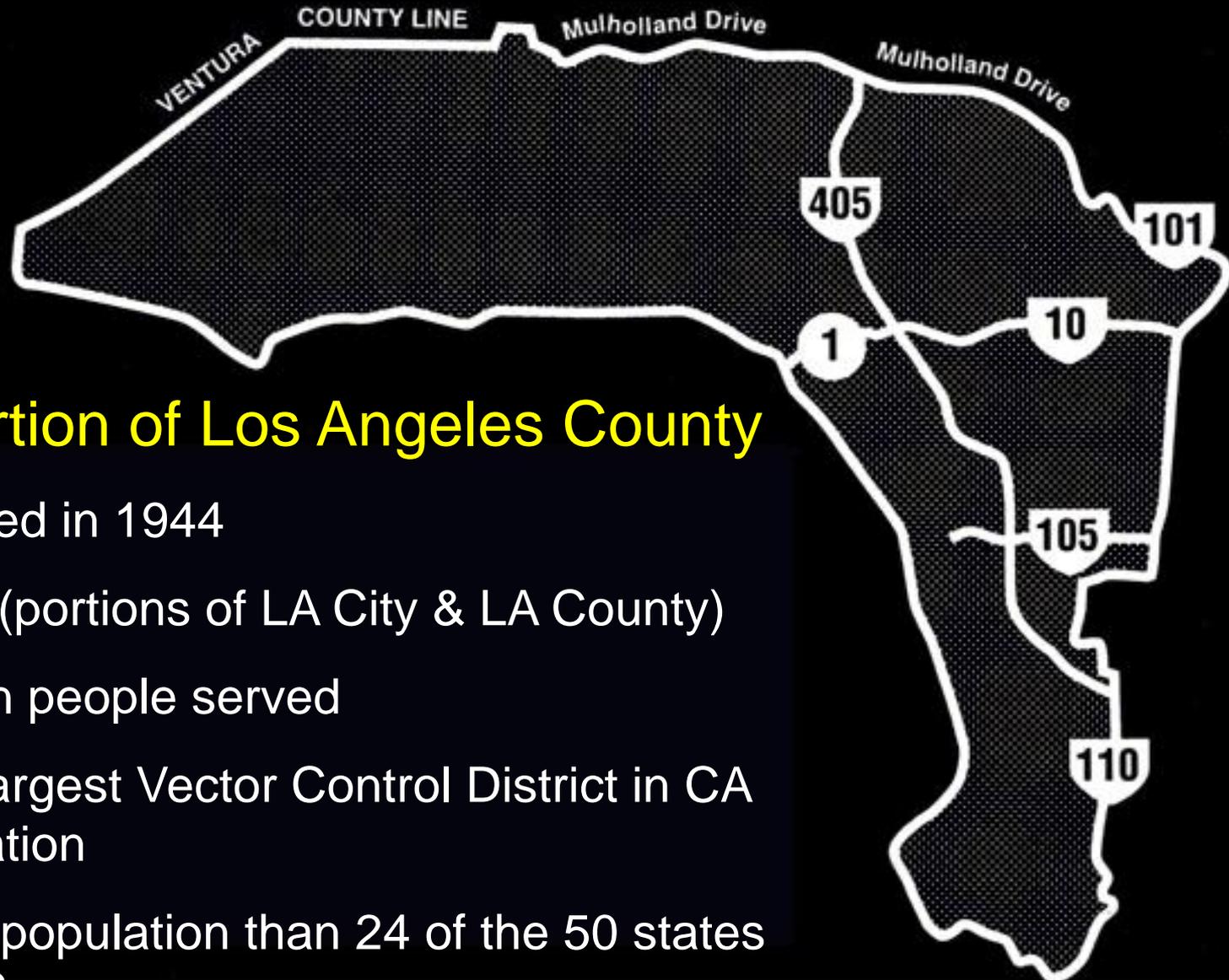
Los Angeles County West Vector & Vector-Borne Disease Control District

Palos Verdes Estates Trustee: William Ailor Ph.D.
Executive Director: Robert Saviskas M.S., R.E.H.S.

(310) 915-7370

www.lawestvector.org

District Boundaries



Western portion of Los Angeles County

- Established in 1944
- 23 Cities (portions of LA City & LA County)
- 4.2 million people served
- Second largest Vector Control District in CA by population
- Larger in population than 24 of the 50 states in the U.S.

What is a Vector?

- Any insect (or other arthropod) capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury.



Primary Vector Control Programs

1. **Mosquitoes:** & Associated Disease Control
2. **Africanized Honey Bees:** & Other Stinging Insects
3. **Ticks:** & Lyme Disease Surveillance
4. **Fire Ants:** Red Imported Fire Ants (RIFA)
5. **Surveillance:** Vector-Borne Disease Surveillance and Testing
6. **Public Education:** Lectures, Public Events, Pamphlets, Mailings, Website, etc.
7. **Others:** Biting Blackflies, Biting Midges etc.

Mosquito Control Program

Mosquito Life Cycle

EGG → **LARVA** → **PUPA** → **ADULT**



7 Days

1 Female Mosquito Can Produce 8 Million Mosquitoes in Only 21 Days

DAY 1



DAY 7



DAY 14



DAY 21



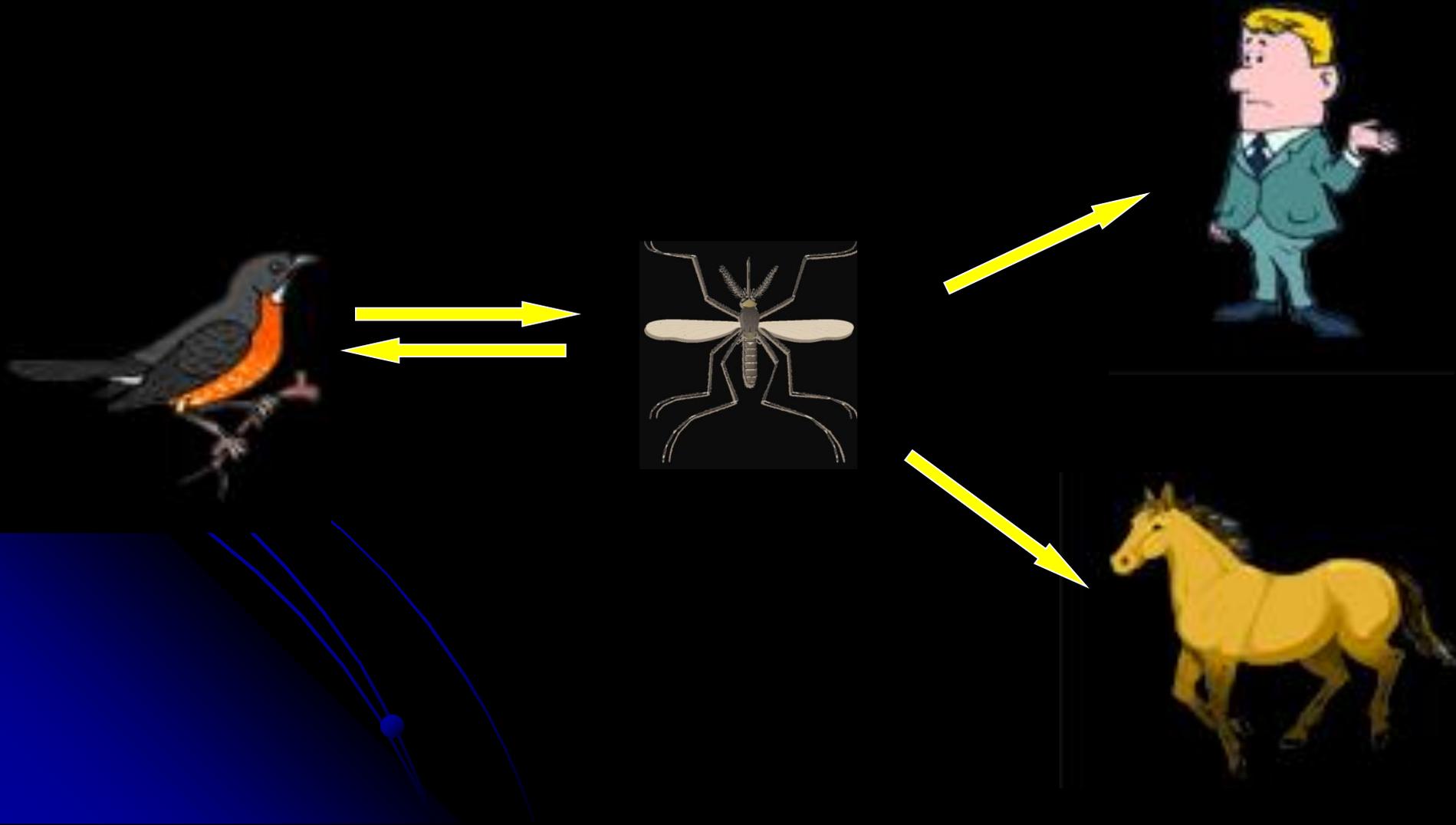
Mosquito-Borne Diseases

Locally Transmitted



- Mosquito-Borne Disease Transmission in CA
 - West Nile Virus (WNV) (*Cx.tarsalis* & *Cx. quinquefasciatus*)
 - St. Louis Encephalitis (*Cx.tarsalis* & *Cx. quinquefasciatus*)
 - Western Equine Encephalitis (*Cx.tarsalis* & *Cx. quinquefasciatus*)
- * Wild Birds (152 spp.) serve as the Reservoir Hosts for WNV

West Nile Virus Transmission Cycle



West Nile Virus Case Count in LA County

YEAR	TOTAL HUMAN CASES REPORTED	FATALITIES
2013	165	9
2014	218	7
2015	300	24
2016 (as of 10-7-16)	108	4

WNV Clinical Epidemiology

80%: No Symptoms

20%: Develop “West Nile fever”
(Flu-like symptoms)

~1%: Will develop severe illness
(Encephalitis, meningitis, paralysis and death)

Who is at Greatest Risk?

- Persons over age 50
- Immunocompromised individuals



Invasive Aedes Mosquitoes



Asian Tiger Mosquito

Aedes albopictus



Yellow Fever Mosquito

Aedes aegypti



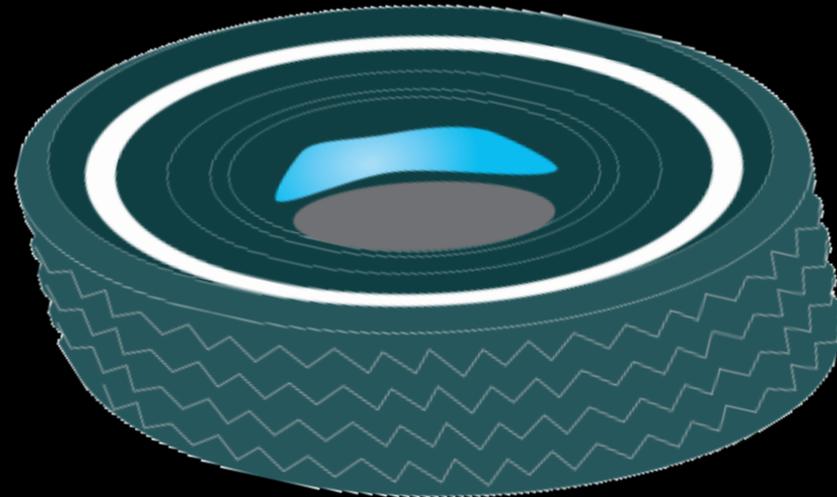
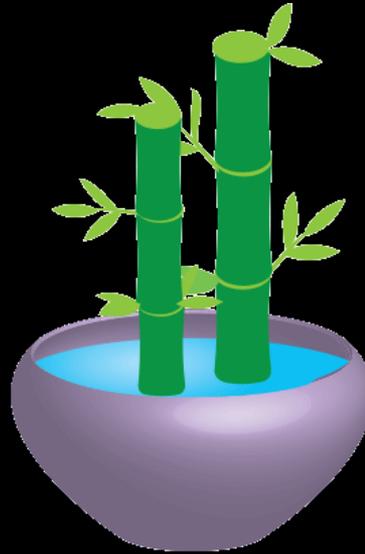
Australian Backyard Mosquito

Aedes notoscriptus

Aedes Characteristics

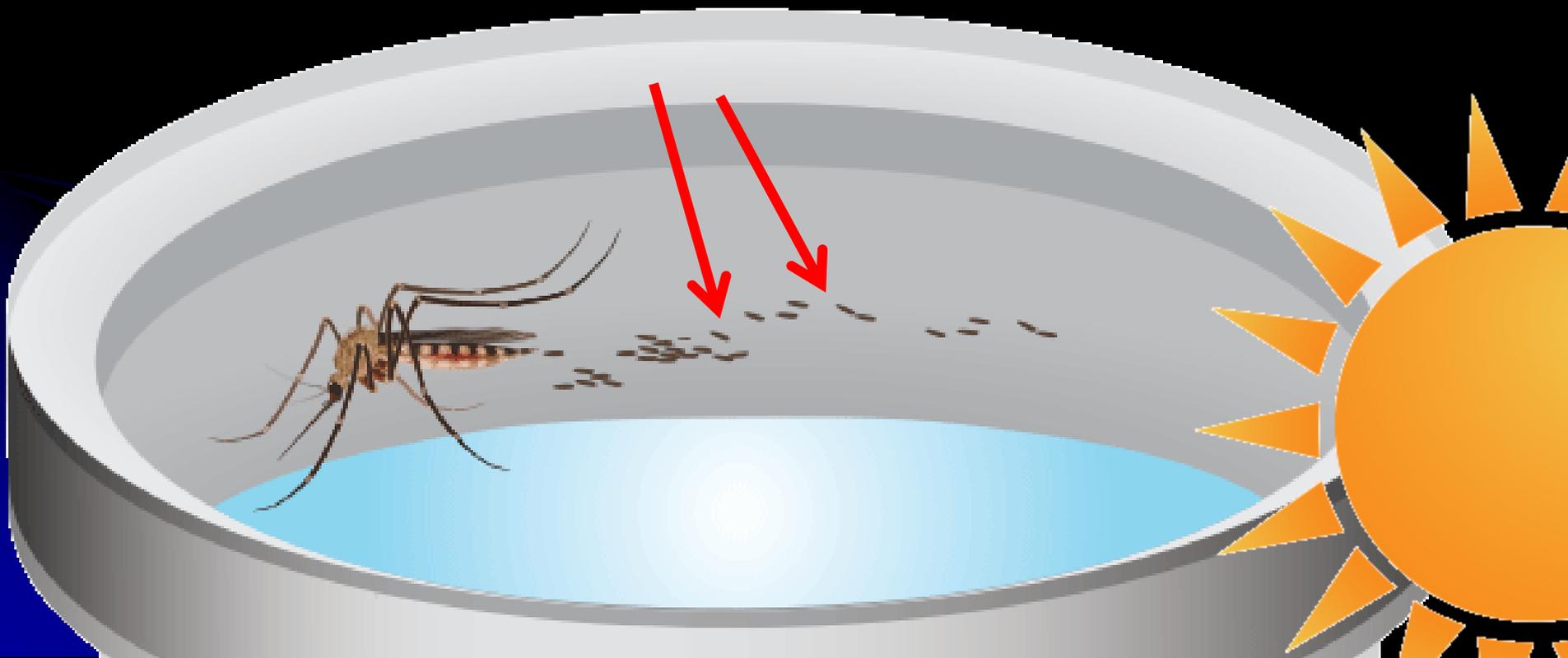
- **Small:** with black and white stripes
- **Daytime Biter:** Aggressive daytime biter; but can also bite at night
- **Breeds:** Breeding can occur both indoors and outdoors
- **Eggs:** Eggs are laid above the water line in containers holding as little as a teaspoon of water (**especially plant saucers**)

Invasive *Aedes* Mosquitoes Breeding Sites



Remove and Dispose of all Plant Saucers

because they can have *Aedes* eggs attached to them that will hatch months later when water rises again from sprinklers or rain up to 1 year after they have been deposited by the *Aedes* mosquito



Aedes Diseases with the Potential to be Transmitted Locally

- Dengue fever
- Chikungunya
- Yellow fever
- Zika virus

Zika Virus

TRANSMISSION



Primarily through bite of infected Aedes mosquito – which also spreads dengue and yellow fever. Evidence suggests that virus may also be transmitted by blood transfusion, sexual contact, or from mother to foetus during pregnancy, but these instances are rare

MICROCEPHALY



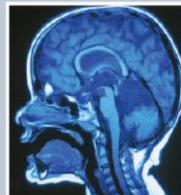
Virus suspected of causing brain defect in babies, resulting in reduced head size. Affected children face learning disabilities or death if brain is very underdeveloped. Microcephaly cases in Brazil have surged from average of 163 per year to almost 4,000 since October 2015

SYMPTOMS



Include fever, rash, joint pain, red eyes (conjunctivitis) and headache. About one in five people thought to develop symptoms – illness often mild, lasting from two to seven days. Most people fully recover without serious complications. Deaths are rare

GUILLAIN-BARRE SYNDROME



Rare disorder in which body's immune system attacks part of nervous system, causing weakness and sometimes paralysis. Most patients recover, but syndrome can be deadly. Cases linked to Zika have been reported in Brazil and French Polynesia

TREATMENT



No vaccine or antiviral medicine available. Patients advised to rest and drink plenty of fluids. Prevention entails avoiding contact with mosquitoes. Health officials recommend covering up, using insect repellent and keeping windows closed or screened

TRAVEL ADVICE



CDC recommends that pregnant women postpone travel to areas where Zika is spreading locally. List includes 20 Latin American and Caribbean countries – as far north as Mexico – plus Samoa and Cape Verde. Northeastern Brazil hardest hit by virus

Breeding Sources

Residential

80% of all Mosquito Breeding



Ornamental Ponds



Swimming Pools



Containers



Animal Water Troughs

Breeding Sources

Public, Commercial & Industrial



Industrial Areas



Drains



Curbing



Tires

Control Methods

Physical, Biological, Larvicides



Physical



Biological



Larvicides

Mosquito-Borne Disease Surveillance

1. Collect, I.D. & Test Mosquitoes
2. Test Sentinel Chickens
3. Collect & Test Dead birds

WNV Hotline:
(877) WNV-BIRD

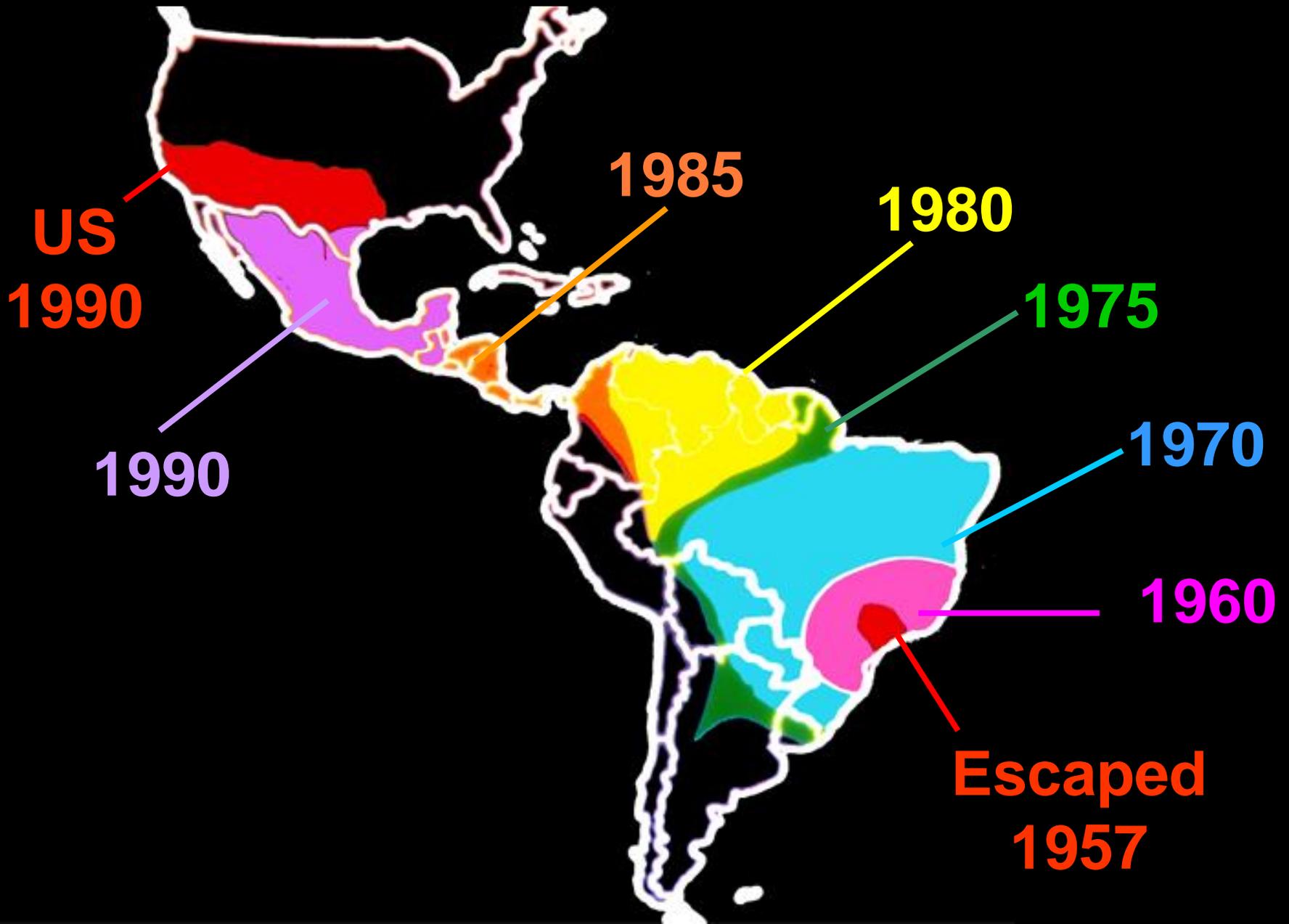


Africanized Honey Bee Program

- Defend a wide area around their nest
- Can sense an intruder 50 ft. from their nest & will pursue a person 1/4 mile or more
- Respond quickly and sting in large numbers: 1,500 –2,000 bees (1,500 stings can be lethal)
- Remain agitated longer
- Swarm frequently



Progression of the AHB



Stinging Insect Control Program

- **Remove Bees or Wasps:** Outside of a structure (public or private property)
- **Height Limitation:** 10' for nests; 15' for swarms
- **Secondary Responders:**
 - Remove bees
 - Cleanup dead bees
 - Collect information & samples



Ticks & Lyme Disease (LD)



- **LD: Tick-borne bacterial disease** transmitted by Western black-legged ticks (*Ixodes pacificus*)
- **Human Cases in 2015**
 - California: 101 cases
 - United States: >31,000 cases

Signs & Symptoms of LD

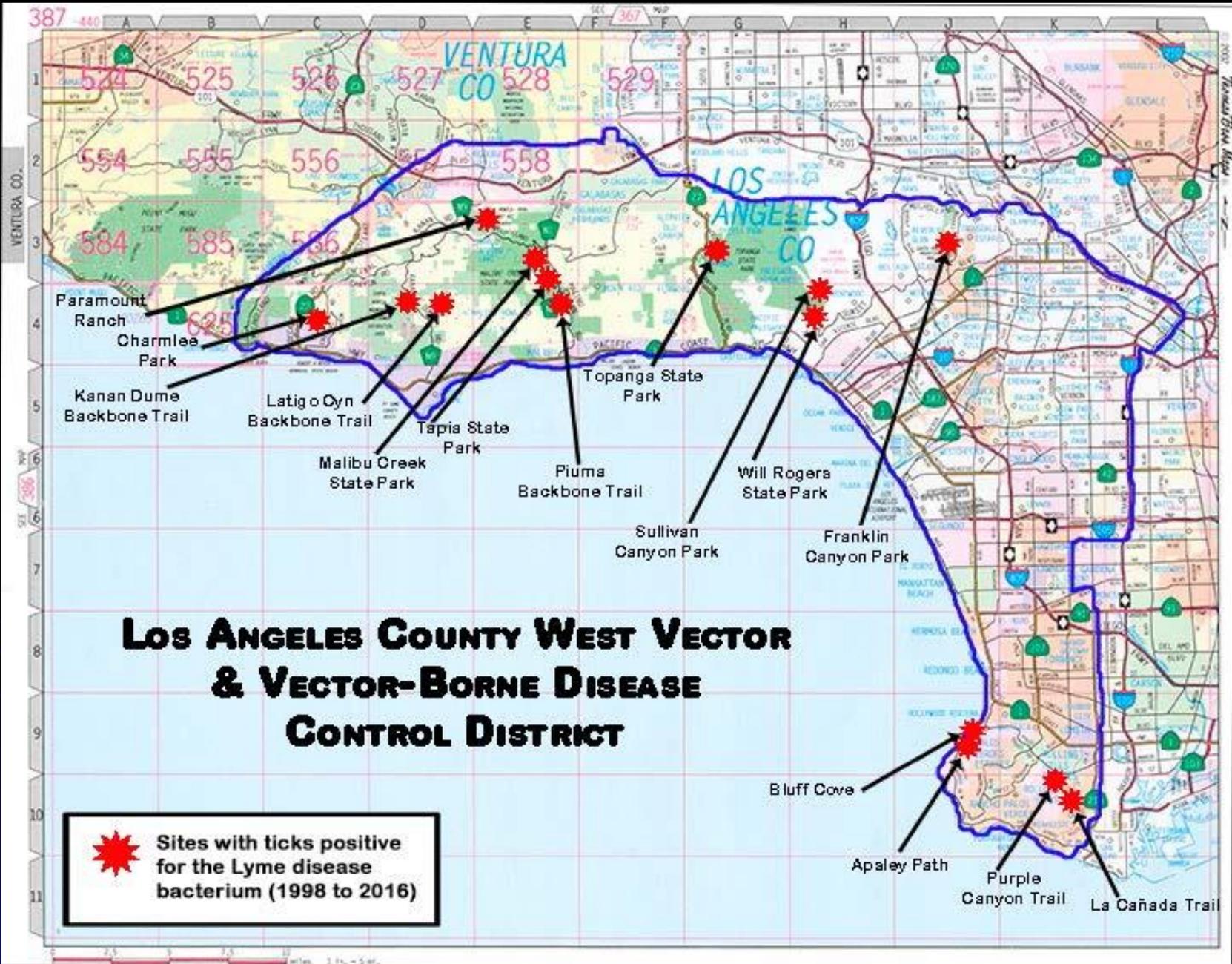
- **Initial Symptoms:**

- Flu-like Symptoms
- Erythema Migrans (Target Rash) –
(Does not occur with all LD infections)

- **Advanced Symptoms:**

- Nervous system problems
- Heart problems
- Arthritis
- Cognitive disorders





LOS ANGELES COUNTY WEST VECTOR & VECTOR-BORNE DISEASE CONTROL DISTRICT

 Sites with ticks positive for the Lyme disease bacterium (1998 to 2016)

Trails Routinely Sampled & Tested for Lyme Disease in PV Peninsula

- *Bluff Cover (PVE)
 - *Apaley Path (PVE)
 - *Purple Trail (RH)
 - *La Canada Trail (RH)
 - George Canyon Park (RHE)
 - Bowie Trail (RH)
 - Upper & Lower Willow Springs Trail (RH)
 - Forrestal Reserve (RPV)
 - White Point Nature Preserve (San Pedro)
 - Shore Line Park Ocean Trail Preserve (RPV)
 - Miraleste Canyon (RPV)
 - McBride Trail (RPV)
 - Crooked Patch Trail (RPV)
 - Linden Chandler Reserve (RHE)
 - Abalone Cove Reserve (RPV)
 - Portuguese Bend Reserve (RPV)
- * Positive for Lyme Disease

Red Imported Fire Ants (RIFA) Surveillance Program

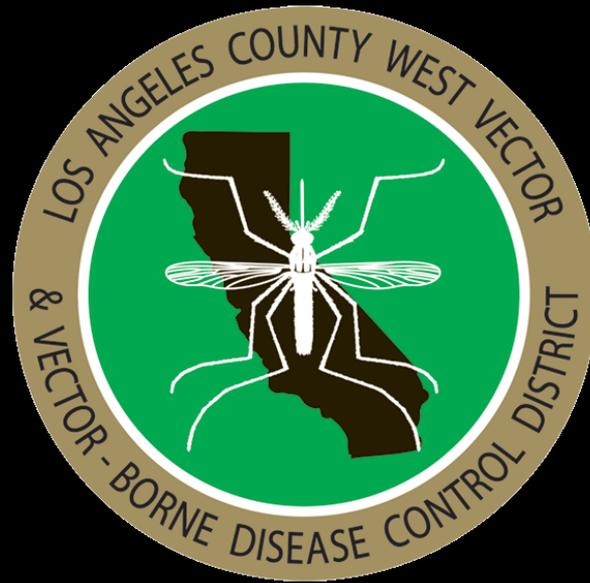
- **Bite & Sting:** Very aggressive; Severe pain & pustules
- **Damage:** \$140 million each year in U.S.
- **District:** Surveillance, trapping & testing for RIFA infestations



Important Phone Numbers

- 911 - Multiple stinging emergencies
- 1-877-WNV-BIRD - To report dead birds
- Los Angeles County West Vector Control District at (310) 915-7370 :
 - To report a mosquito problem/standing water
 - To obtain mosquito fish
 - To remove swarms/hives (outside of a building)

Website: www.lawestvector.org



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