



COUNTY OF EL DORADO
ENVIRONMENTAL MANAGEMENT
DEPARTMENT
VECTOR CONTROL & MOSQUITO
PROGRAM

Board of Supervisors
March 13, 2018

OUTLINE:

- ▶ What is a vector?
- ▶ What is vector control?
- ▶ Mission of vector control
- ▶ East and West Slope program activities
- ▶ Emerging trends in California – Bryan Jackson, Ph.D, CDPH
- ▶ East / West Slope program comparison
- ▶ Benefits of West Slope program expansion
- ▶ West Slope program expansion options
- ▶ Next steps
- ▶ Questions

WHAT IS A VECTOR?

- ▶ Any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and small mammals and other vertebrates. (Health and Safety Code, Section 2002(k)).



WHAT IS VECTOR CONTROL?

- ▶ Any system of public improvements or services that is intended to provide for the surveillance, prevention, abatement, and control of vectors as defined in subdivision (k) of Section 2002 of the Health and Safety Code and a pest as defined in Section 5006 of the Food and Agricultural Code (Government Code Section 53750(m)).



VECTOR CONTROL PROGRAM MISSION

- ▶ To provide quality Vector Control services by protecting the public health and safety with minimal impact to the environment.



EAST SLOPE VECTOR PROGRAM

- ▶ CSA-3 was formed in 1963 in response to citizen complaints regarding an abundance of pest mosquitoes.
- ▶ Vector Control District established in 1980.
- ▶ Funded by property taxes and parcel service fees.
- ▶ Covers 195 square miles from the crest of the Sierra Nevada mountains to the shore of Lake Tahoe in both the City of SLT and in the unincorporated areas of El Dorado County (East Slope).
- ▶ Targets: surveillance and control of mosquitoes, mosquito breeding source site evaluation and treatment, yellow jackets, plague, hanta virus and dead bird West Nile virus testing.
- ▶ Seasonal program usually running from late Spring into Fall.
- ▶ On average, East Slope vector responds to over 200 complaints during the season.
- ▶ 6 staff consisting of 2 limited term and 4 seasonal Vector Control Technicians.
- ▶ Annual budget approximately \$400,000.

EAST SLOPE VECTOR CONTROL OUTREACH AND SERVICES

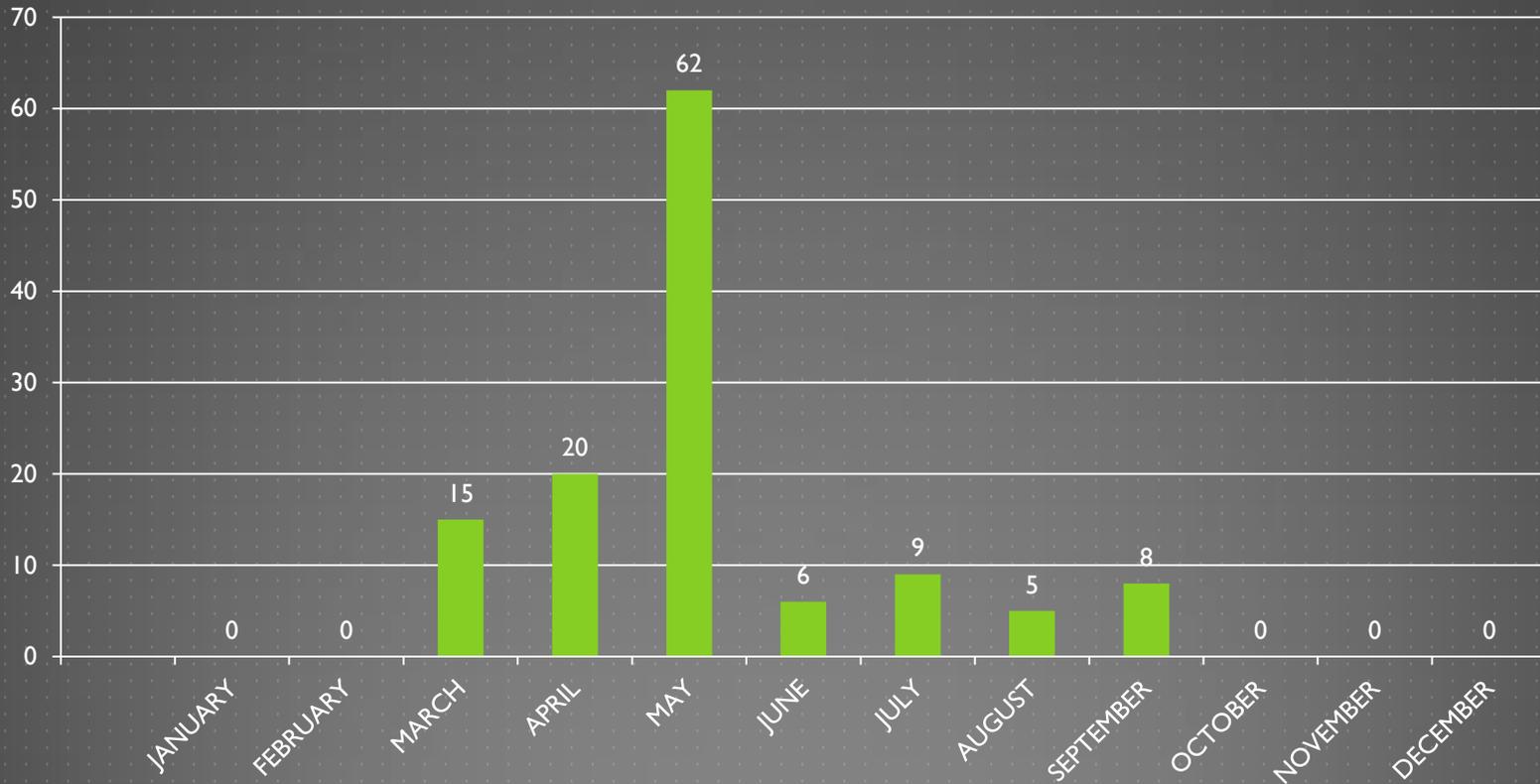
Toogee Sielsch, Vector Control Technician II



WEST SLOPE MOSQUITO PROGRAM

- ▶ Funded by the County General Fund - approximately \$60,000 annually.
- ▶ West Slope from below Echo Summit west to El Dorado Hills/County line.
- ▶ Seasonal program usually running from Spring to early Fall.
- ▶ Targets: mosquito breeding source site evaluation and treatment, dead bird West Nile Virus testing.
- ▶ Program is primarily complaint/request driven.
- ▶ On average, West Slope vector responds to over 100 complaints during the season varying from water drainage, mosquitofish requests, abandoned pools, ponds and tree hole mosquitos.
- ▶ Limited time available for surveillance and public outreach.
- ▶ Staff level consists of one seasonal Vector Control Technician.

TOTAL NUMBER OF COMPLAINTS (125) WEST SLOPE - 2017



EMERGING TRENDS IN CALIFORNIA

- ▶ Bryan Jackson, PhD
 - Senior Public Health Biologist
 - California Department of Public Health
 - Vector-Borne Disease Section

Mosquito-Borne Diseases

Recent Trends in California

Bryan T. Jackson, PhD
Senior Public Health Biologist
California Department of Public Health
Vector-Borne Disease Section





CDPH's Roles

- Memorandum of Understanding regarding pesticide use for public health purposes
 - Dept. of Pesticide Regulation
 - Pesticide-related authority
 - County Agricultural Commissioners
 - Compliance with state and federal laws and regs for pesticide storage and use
 - CDPH
 - Cooperative Agreements with government agencies (allows use of public health pesticides with exemptions from several “ag” use regs)
 - Examination, certification, and continuing education of pesticide applicators

CDPH's Roles (cont.)

- Coordination of CA Arbovirus Surveillance Program
 - Human surveillance, dead bird reporting, mosquito testing
- Preparedness and response to vector-borne disease outbreaks
- Advise local agencies on mosquito and vector control regulatory issues



FIGHT THE BITE! WestNile.ca.gov California West Nile Virus Website

Submit an Online Dead Bird Report

HOME REPORT A DEAD BIRD WNV FAQs & BASICS NEWS RESOURCES REPORTS Last Updated: Feb 02, 2018 1:35pm PST

PARTICIPATING AGENCIES CA DEPT. OF PUBLIC HEALTH UC DAVIS ARBOVIRUS RESEARCH AND TRAINING MOSQUITO AND VECTOR CONTROL ASSOC. OF CA

CASE COUNTS BY COUNTY

County	Dead birds
Alameda	2
Alpine	-
Amador	-
Butte	5
Calaveras	-
Colusa	1
Contra Costa	19
Del Norte	-
El Dorado	2
Fresno	5
Glenn	2
Humboldt	1
Imperial	-
Inyo	-
Kern	3
Kings	1
Lake	5
Lassen	-
Los Angeles	101
Madera	1
Marin	1
Mariposa	-
Mendocino	-
Merced	1
Modoc	-
Mono	-
Monterey	1
Napa	-
Nevada	1
Orange	57
Placer	4
Plumas	-
Riverside	41
Sacramento	86
San Benito	-
San Bernardino	45
San Diego	43
San Francisco	1
San Joaquin	7
San Luis Obispo	6
San Mateo	1

Latest West Nile Virus Activity in California

Data on this website are updated every Friday by 4pm. Due to different reporting schedules, case totals here may not always reflect those reported by local health departments. Updates during the off season (January-April) are less frequent.

INTERACTIVE MAP

View the interactive map courtesy of <http://maps.calsurv.org>

West Nile Virus Activity in California Counties 2017 YTD

Human cases	636
Horses	21
Dead birds	610
Mosquito samples	3371
Sentinel chickens	305

Updated 02/02/18
N = 27 counties with human cases

HUMAN CASES

YTD: 536 Counties: 27
There were 34 new WNV human cases reported in California this week from the following counties: Fresno (1), Kern (1), Los Angeles (13), Merced (7), Orange (1), Riverside (1), Sacramento (2), San Bernardino (7), and Tehama (1).

41 WNV-related fatalities have been reported to CDPH this year from seven local health jurisdictions: Kern (1), Long Beach (2), Los Angeles (27), Orange (3), Riverside (1), San Bernardino (4), Stanislaus (1), and Yolo (2).

536 human cases from 27 counties have tested positive for WNV in 2017.

HORSES

YTD: 21 Counties: 13
21 horses from 13 counties have tested positive for WNV in 2017.

DEAD BIRDS

YTD: 510 Counties: 39
There was 1 new WNV positive dead bird reported in California last week from Santa Clara County.
510 dead birds from 39 counties have tested positive for WNV in 2017.

MOSQUITO SAMPLES

YTD: 3,371 Counties: 27
3,371 mosquito samples from 27 counties have tested positive for WNV in 2017.

A mosquito sample may contain up to 50 individual mosquitoes.

HAVING PROBLEMS WITH MOSQUITOES?

Locate your local mosquito and vector control agency
Search by Zip Code
Look Up

ZIKA

What Californians need to know

More information on mosquitoes, including invasive Aedes, and the diseases they can carry

What you NEED TO KNOW

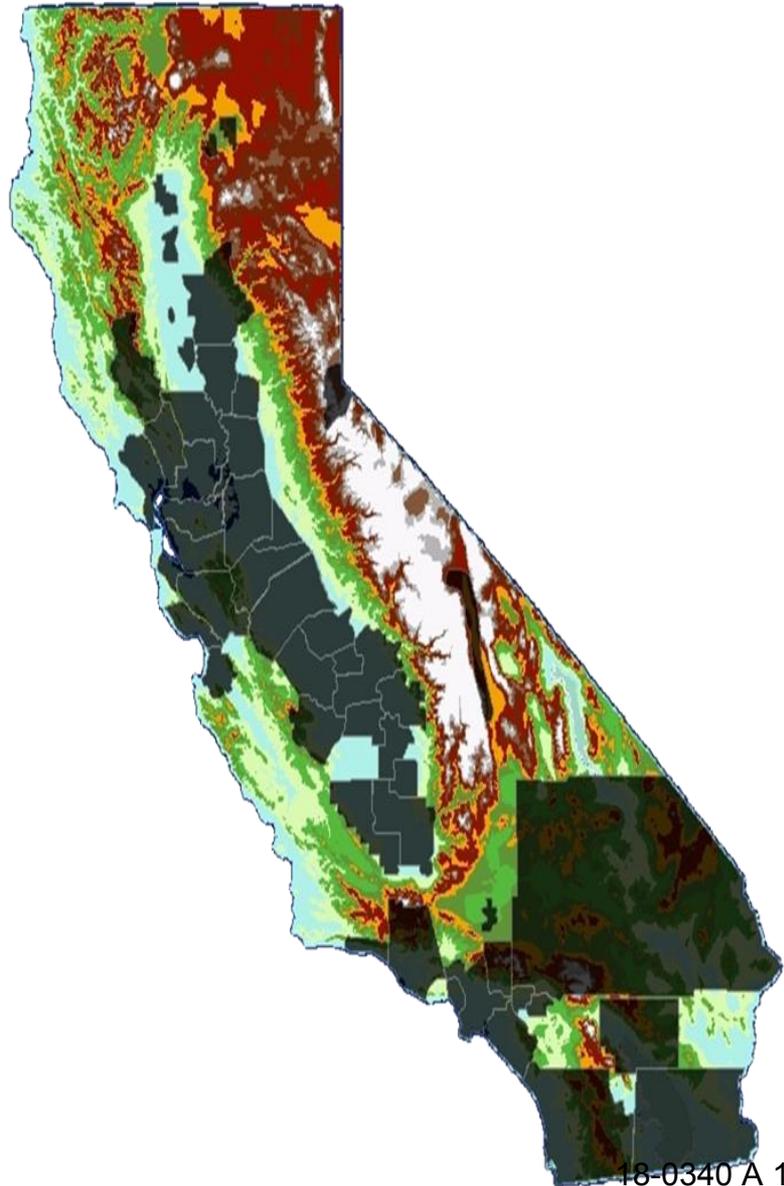
about West Nile Virus
view our FAQ section for tips

St. Louis encephalitis virus

Physician Info

Vector Control Agencies

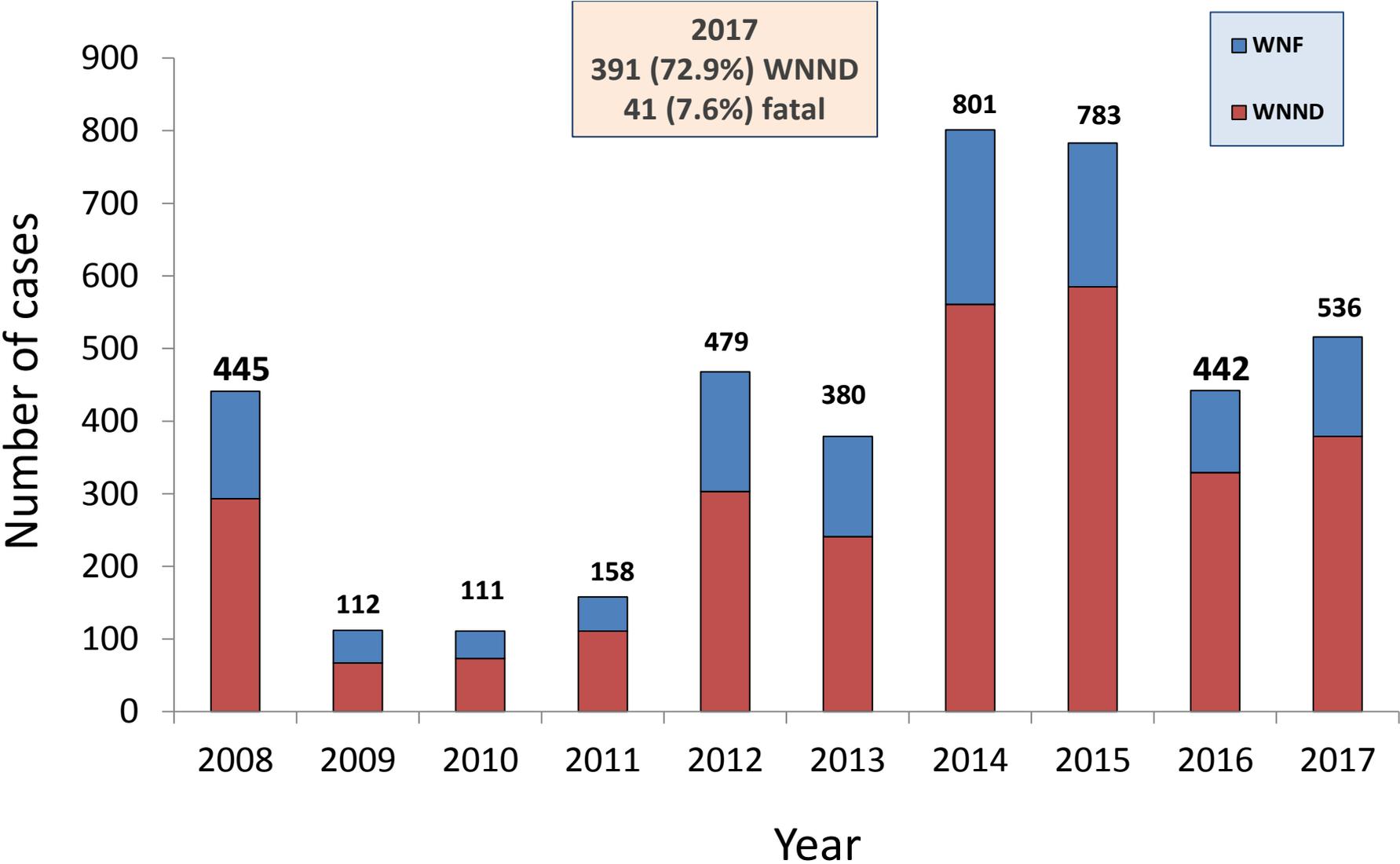
- 1915 Mosquito Abatement Districts Act
- 74 agencies or programs that are signatory to a Cooperative Agreement with CDPH in 2017
- 918 certified technicians
- Serve approx. 90% of CA population
- Funded primarily by local property taxes or assessment fees
- HSC 2000-2093 (Mosquito Abatement and Vector Control Districts)



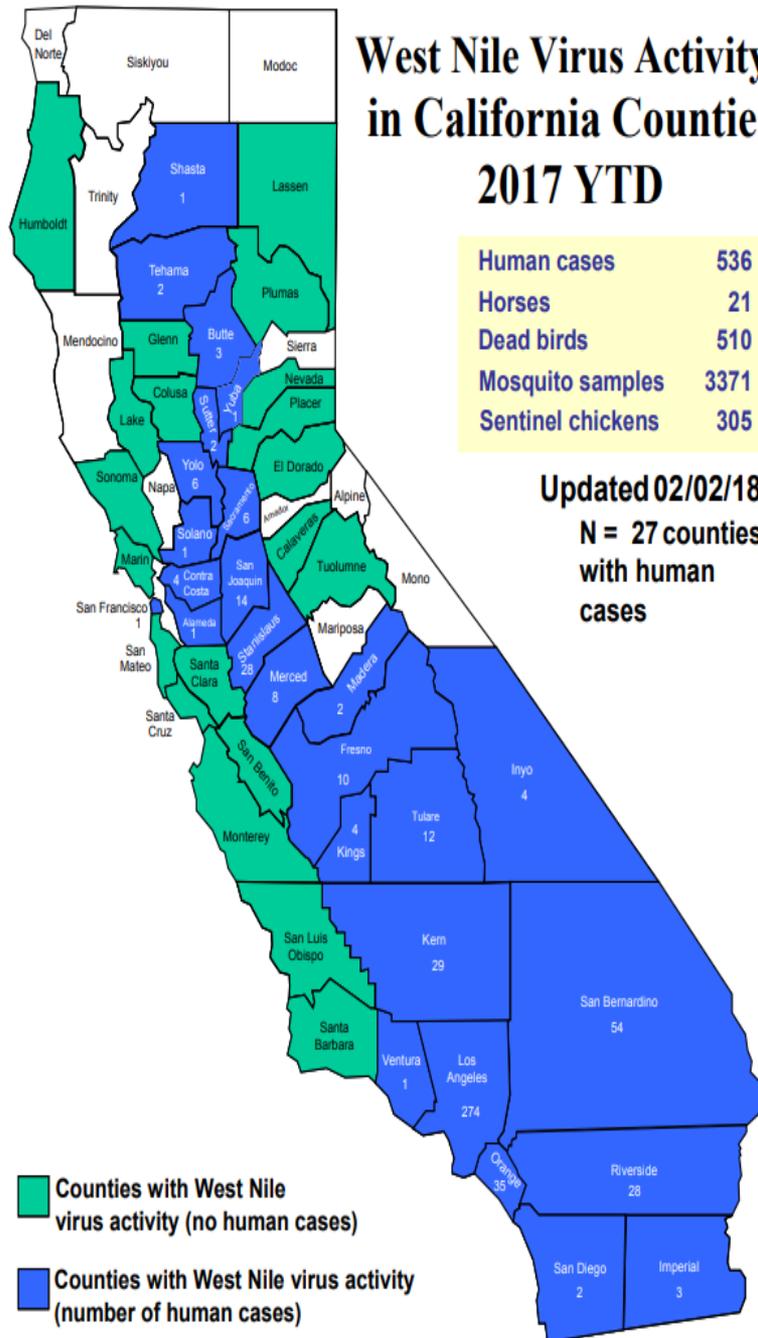
West Nile Virus in CA

- Neuroinvasive flavivirus
- First isolated in CA in 2003
- Now endemic
- Total # of human cases 6,565 (289 fatalities)
- 5 Year Average
 - 33 Counties
 - 481 Human cases

Human WNV Human Cases, CA : 2008 – 2017



West Nile Virus Activity in California Counties 2017 YTD



Human cases	536
Horses	21
Dead birds	510
Mosquito samples	3371
Sentinel chickens	305

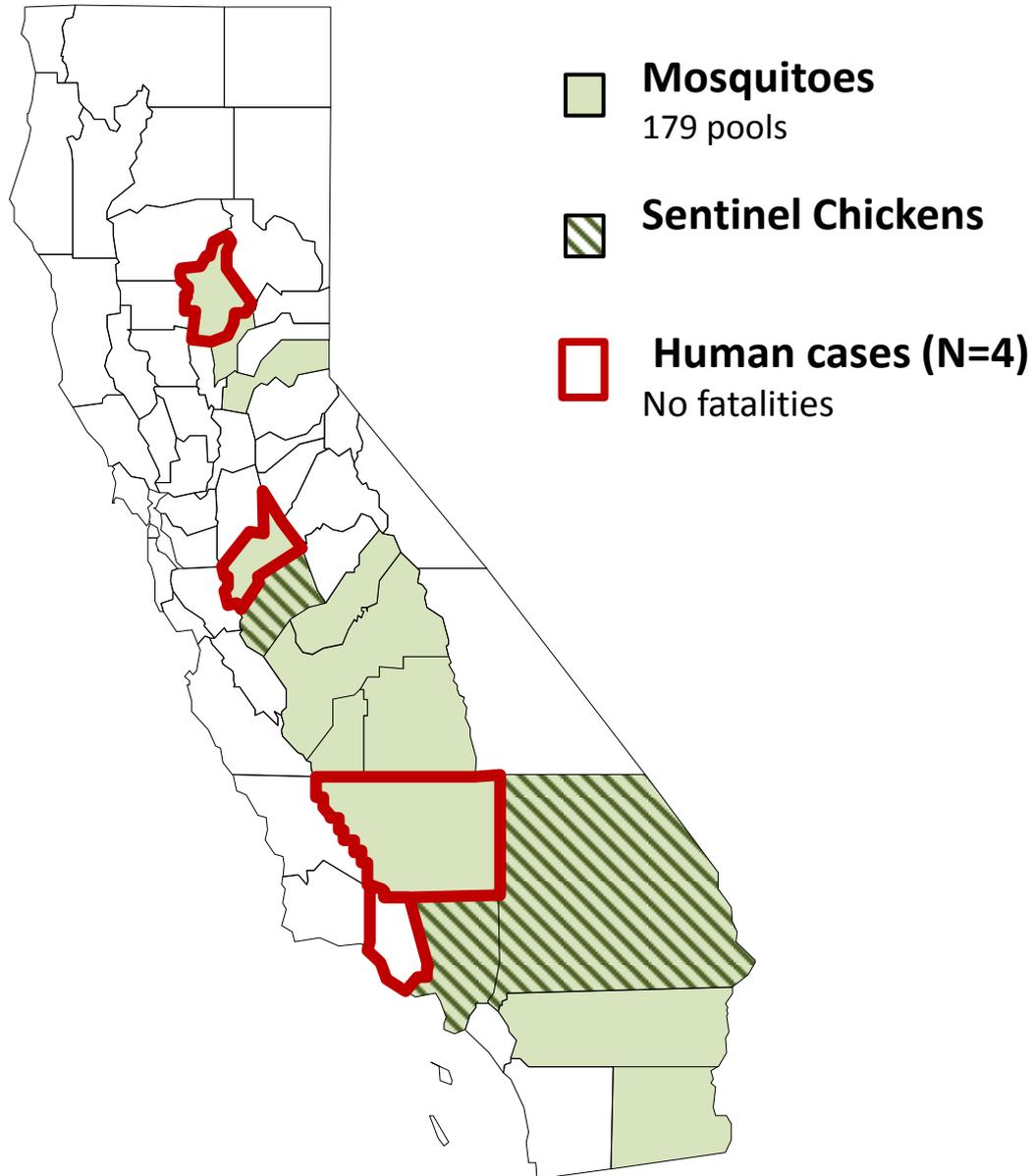
Updated 02/02/18
 N = 27 counties
 with human
 cases

- Counties with West Nile virus activity (no human cases)
- Counties with West Nile virus activity (number of human cases)

St. Louis Encephalitis Virus in CA

- Neuroinvasive flavivirus, related to WNV
- 1938-2003: Detected annually in CA
 - (mosquitoes, chickens, and/or humans)
 - 1997: last human case
- 2004-2014: No detections in California
- 2015: Re-emerged in Riverside County
 - 1 county, 38 mosquito pools, no human cases
- 2016: Spread through Central and Southern CA
 - 10 counties, 180 mosquito pools, 3 human cases (1 fatality)

SLEV Activity, 2017



15 counties

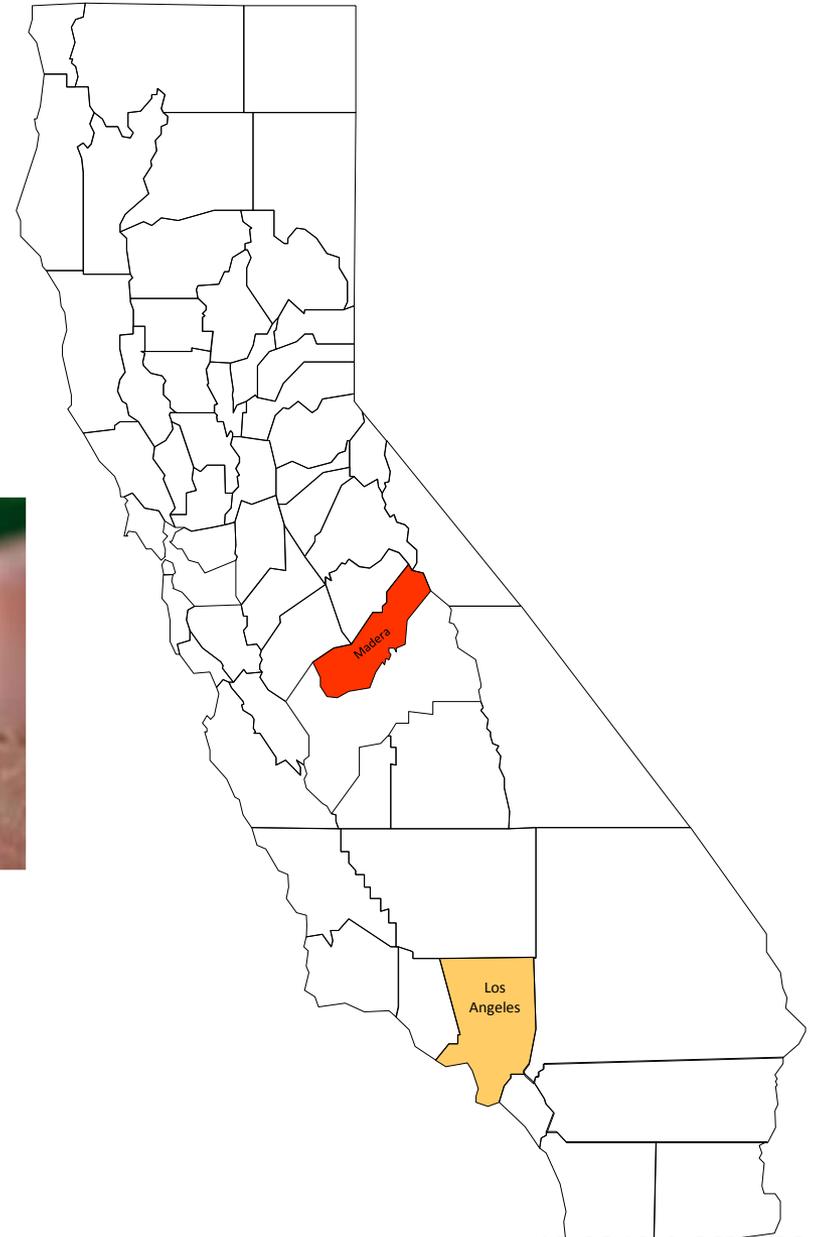
Invasive *Aedes*



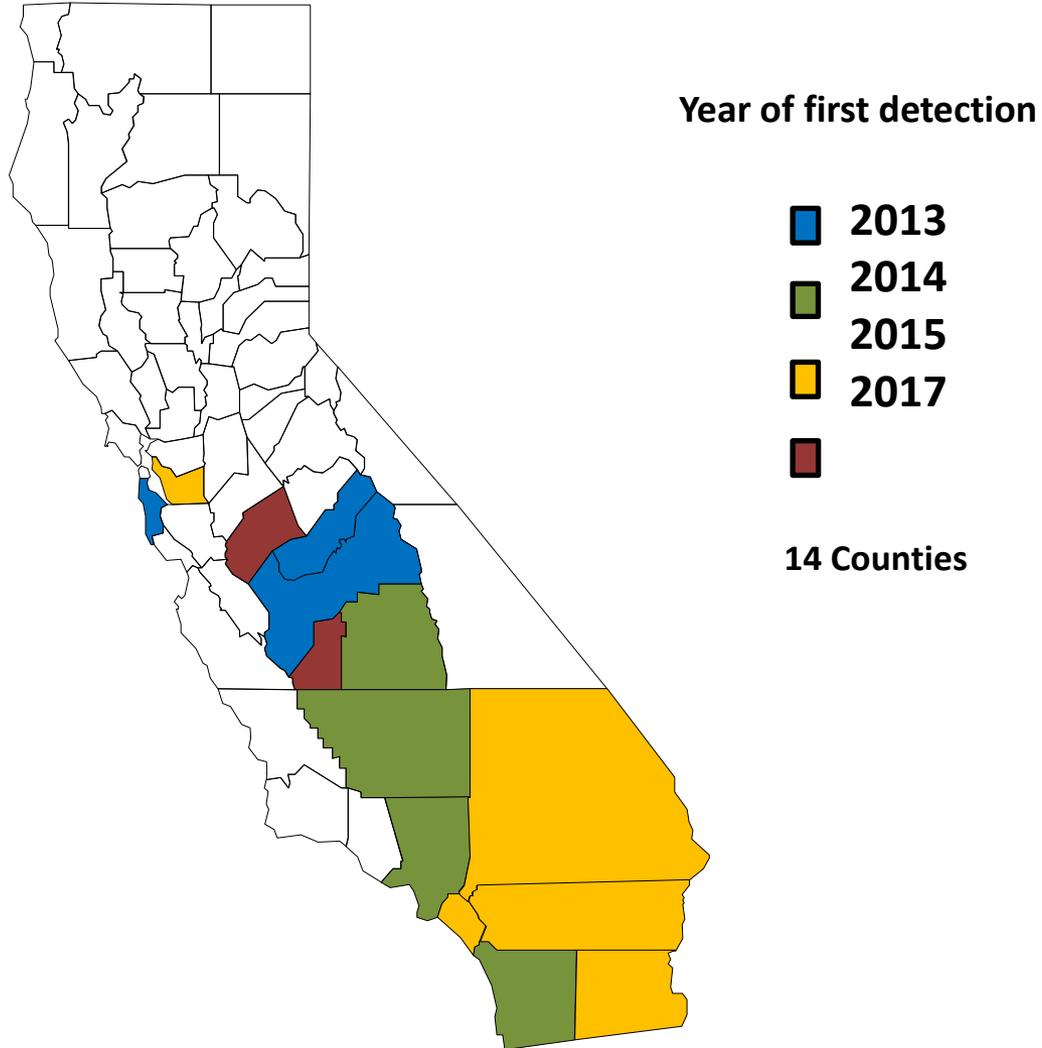
2011
Aedes albopictus
Los Angeles
County



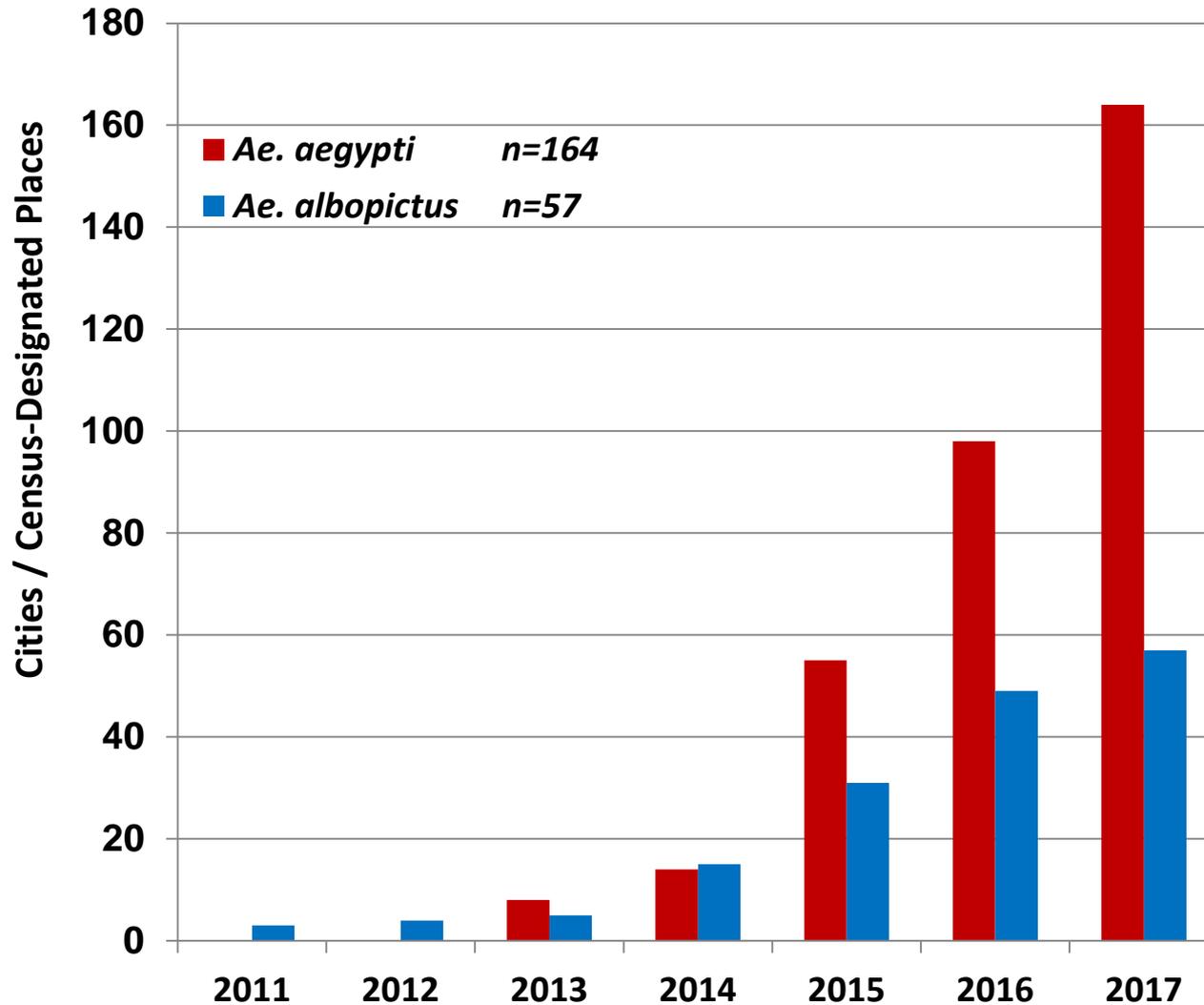
2013
Aedes aegypti
Madera County



Aedes aegypti Detections by County 2013-2017

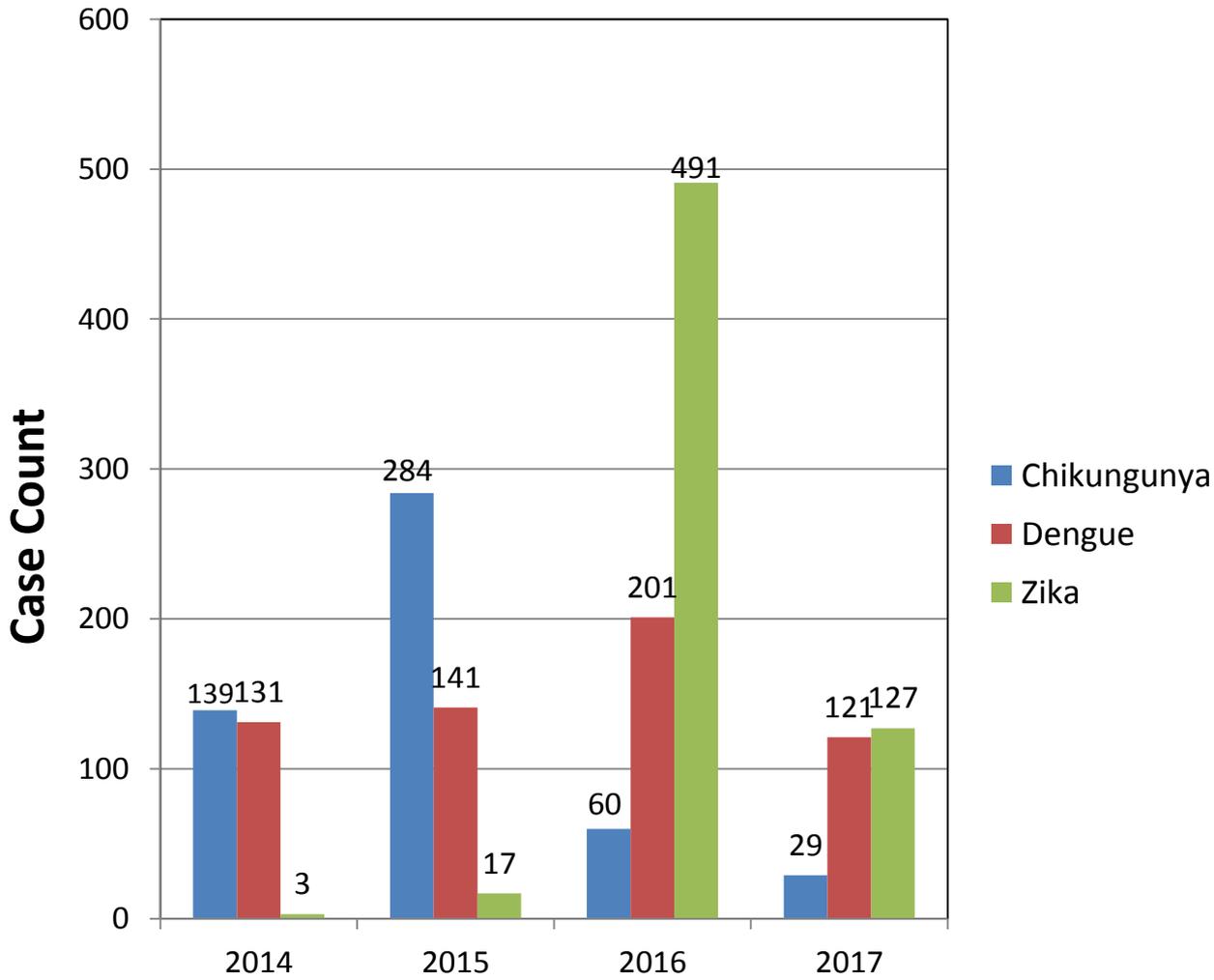


Cumulative Number of City / Census-Designated Places Detections 2011 - 2017



As of Jan 26, 2018

Travel-Associated Cases of Dengue, Chikungunya, and Zika in California, 2014-2017



As of Feb. 14, 2018

Year

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EAST / WEST SLOPE COMPARISON

West Slope Program:

- ▶ Mosquito program only
- ▶ Minimally funded – One seasonal position
- ▶ Complaint/Request for service driven (i.e., Reactive)
- ▶ Limited response capability
- ▶ Limited public education and outreach (website, direct contact)

East Slope Program:

- ▶ Comprehensive Vector Control program (mosquitoes, plague, yellow jackets, other vectors)
- ▶ Fully funded - six seasonal staff
- ▶ Proactive breeding source identification, “BMPs”, and source treatment in addition to complaint response
- ▶ Robust public education and outreach (website, direct contact, events, schools, other groups)

BENEFITS OF WEST SLOPE PROGRAM EXPANSION

- ▶ Proactive mosquito surveillance and control
- ▶ Surveillance for vector-borne diseases (WNV, plague, lyme disease.)
- ▶ Timely response to service requests
- ▶ Mosquitofish for backyard fish ponds and other appropriate habitats
- ▶ Identification of mosquitoes, ticks and other arthropods
- ▶ Public outreach and education.
- ▶ Presentations to schools and civic groups



WEST SLOPE PROGRAM EXPANSION OPTIONS

- ▶ **Minor expansion: One additional seasonal position**
 - ▶ Proactive mosquito surveillance and control (source treatment) with limitations
 - ▶ Timely response to service requests
 - ▶ Increased public education and outreach
 - ▶ Scalable
- ▶ **Major expansion: Establish West Slope Vector Control District**
 - ▶ Increase seasonal staff to 6 or more
 - ▶ Expand service area
 - ▶ Expand vector-borne disease surveillance and response (plague, lyme disease)
 - ▶ Further expand public education and outreach (ex., schools, civic groups)

NEXT STEPS

1. Maintain the status quo of the existing West Slope program; or
2. Direct Environmental Management to work with the CAO to identify potential funding (other than General Fund) to add one seasonal position to the West Slope program (Minor Expansion - Anticipated cost = approximately \$40,000); and/or
3. Direct Environmental Management to further explore the creation of a West Slope Vector Control District and report findings back to the Board.

QUESTIONS?



Thank you:

Bryan Jackson, PhD, CDPH

Toogee Seilsch, SLT Vector Control

Jeffrey Warren, REHS, Manager

Karen Bender, REHS, Supervisor, East Slope

Bryan Vyverberg, REHS, Supervisor, West Slope