



MOSQUITO and VECTOR MANAGEMENT DISTRICT of SANTA BARBARA COUNTY

DISEASE SURVEILLANCE REPORT January/February 2026

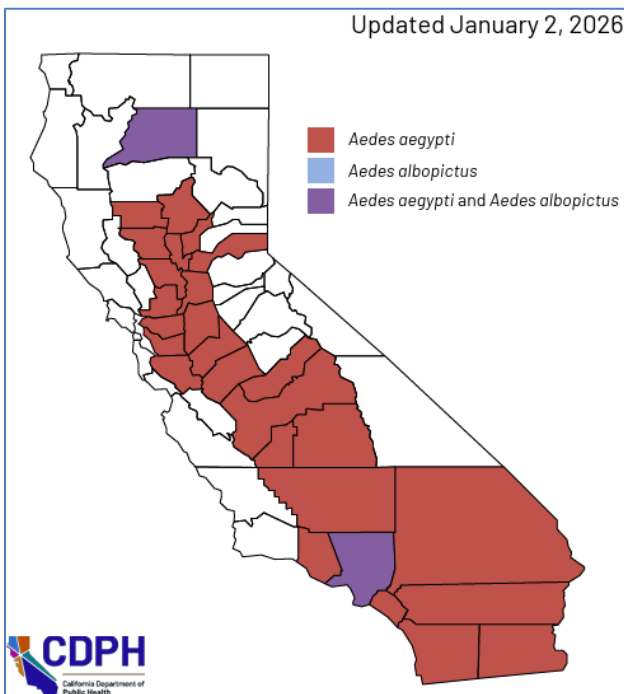
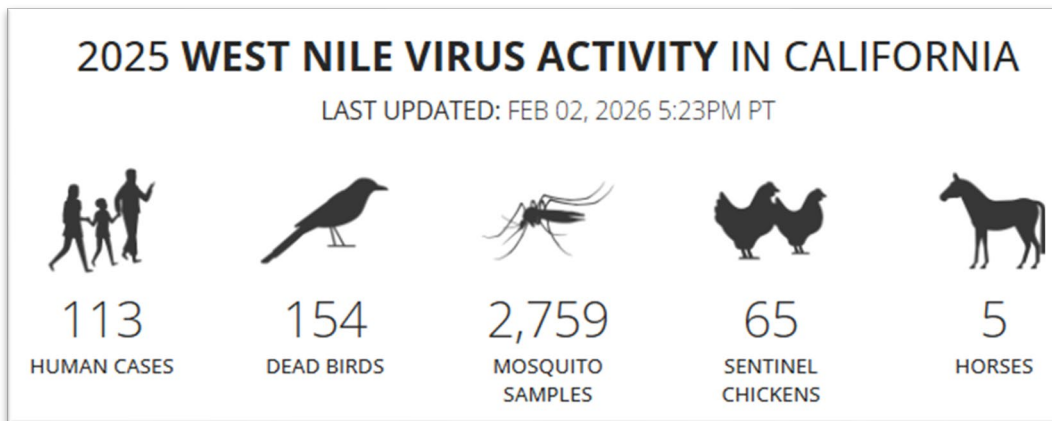
Santa Barbara County Vector-borne Disease Surveillance

A horse diagnosed in August in the Buellton area has been Santa Barbara County's only 2025 detection of West Nile virus (WNV). No dead birds were reported to the WNV hotline in January or February 2026. In 2025, 50 dead birds were reported, 21 were tested for WNV, and none tested positive. The District submitted 188 mosquito samples to test for WNV, Western equine encephalitis virus (WEE), and St. Louis encephalitis virus (SLE); all tested negative. WEE and SLE have never been documented in the County.

Mosquito trapping for the 2026-27 season will begin as workload and weather allow.

District staff assisted CDPH biologists in collecting ticks on February 25th. Sampling was done at Painted Cave, Gaviota, and the La Purisima Mission. Results are pending CDPH processing and testing.

California Vector-borne Disease Surveillance



Update on Invasive *Aedes* Mosquito in California

No invasive *Aedes* species have been detected in Santa Barbara County since May 2021. *Aedes aegypti* is found in 28 California counties and *Aedes albopictus* is found in two.

In 2025, the CA Dept. of Public Health reports 6 locally-transmitted cases of dengue virus in California (five of them located in the City of La Puente, Los Angeles County). Non-native *Aedes* mosquitoes, capable of vectoring dengue, Zika, and chikungunya viruses, are common in the Greater Los Angeles area. One mosquito sample collected in Greater L.A. has also tested positive for dengue virus. In 2024, there were 18 locally-transmitted dengue cases. As of March 1, there have been three travel-related human dengue cases and no cases of Zika virus or chikungunya virus in California in 2026.

Select Slides from the 2026 Mosquito and Vector Control Association of California (MVCAC) Conference

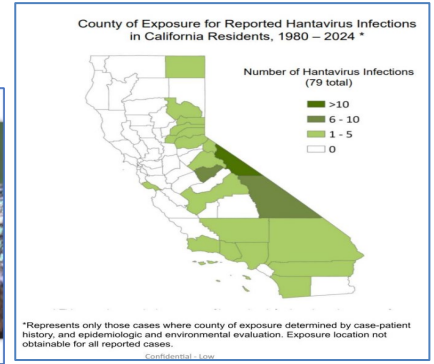
What is One Health?

One Health is a globally recognized approach that incorporates the interdependency of **people, animals, plants, and our shared environment** into strategies that achieve optimal health outcomes and well-being for all.

CDPH

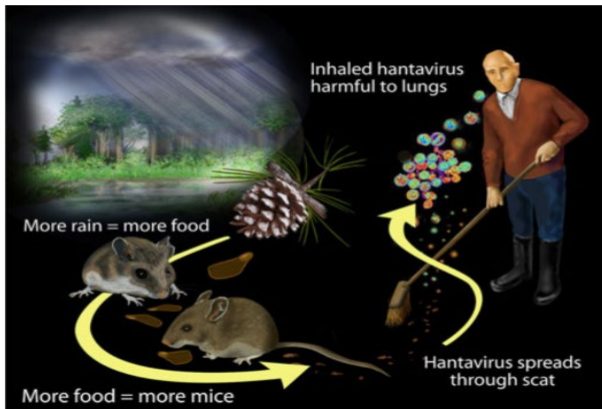
Lizard Noosing 101

A lizard with ticks



Ticks can be collected by snaring lizards

Hantavirus human cases



- Second case onset 2/13/25
- Risk factors: Home was under renovation that allowed rodents free access. Rodent evidence seen in all rooms.
- Worked at MMSA and wore the Woolly mascot outfit. Mascot storage showed mouse feces and urine in cubby containing the mascot head
- *P. maniculatus* from inside the house was >99% sequence match

CDPH

Three Mammoth Mountain employees died of hantavirus in early 2025. One was infected after wearing the mascot costume, one moved a stack of fire wood, and the third used a vacuum cleaner daily.

Plague (*Yersinia pestis*)

- Introduced in 1900 to SF by *Rattus* spp.
- Los Angeles in 1908
- Quickly spread to sylvatic rodents
- Control in urban areas effective
- Rural spread unstoppable
- 66 human cases (1927-2025)

1909

Observation of *Y. pestis* in wild rodents

Initial introductions of *Y. pestis*, 1900-1908

Bark Scorpion Identification

- *Centruroides* sp.
 - Either Arizona Bark Scorpion or Baja California Bark Scorpion
 - Morphologically identical
- Medium sized scorpion, grows up to 3 inches in length
- Tan/brownish coloration
- Long slender tail, slender pincers
- Small toothlike structure right above stinger

Protecting Public Health Since 1928

Door to Door (D2D) Inspections

Specifically Travel-Associated Cases

Small Scale D2D

- About 7 – 8 properties around the index property
- Any nearby conducive properties
- Takes about 1-2 hours to complete

Full Scale D2D

- Properties within 150-meter radius from index property
- Takes about 2 - 4

Briefing: HIPAA, logistics, type of neighborhood (language), safety precautions

Operations Department in conjunction with Scientific Technical Services (Sci-Tech) Department determine whether it is a Small or Full Scale D2D

Full Scale D2D

Properties are inspected within a 150-meter radius from index property

Create Teams

- Evenly distribute number of properties among teams
- 4 teams (2 people per team)
- 2 logistics

Return date

- 1 week from initial date
- 1 team (2 people)

Invasive Aedes inspections in areas near homes of travel-related cases of dengue virus



RIFA Characteristics

There are over 20 different species of ants in the Coachella Valley.

- Reddish to dark brown in color, up to ½ an inch in size.
- Glossy exoskeleton.
- More aggressive than most ant species.
- Thrive in populated areas.
- Prefer wet areas.
- RIFA stings may cause severe allergic reactions, mainly in small children, the elderly, and pets.
- Burn at first then itch. Pustules present due to reaction.

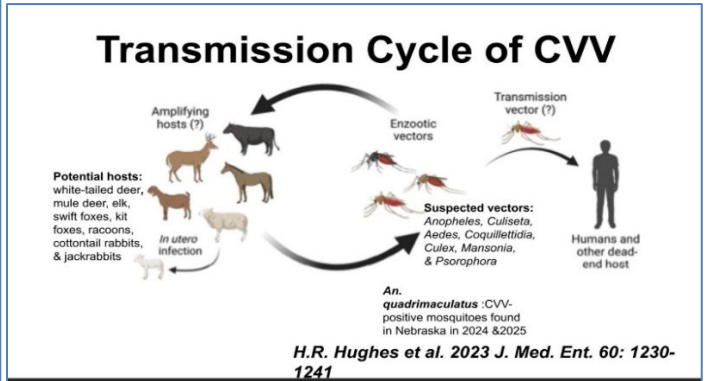
Flower vases in cemeteries produce mosquitoes

What is Cache Valley Virus (CVV)?

An emerging arbovirus important in public and veterinary health

- Mosquito-borne *Orthobunyavirus* in the Bunyamwera serogroup
- Originally described in 1956 from *Culiseta inornata* in Cache Valley, Utah
- Now circulating in most of US, southern Canada, and Mexico
- In sheep and goats, affects CNS and musculoskeletal system
 - High rates of fetal abnormalities and stillbirth following infections in naive ewes and does
 - Outbreaks in US and Canada
- Can cause meningitis, encephalitis, and death in humans
 - 7 documented human cases

Harvey J, et al. Vet Rec Case Rep 2019;7:e000725



Vacant or Occupied?

- Must make an attempt to gain permission to enter from homeowner/resident
- Is home occupied or vacant?
- Leave a Green Pool Advisory at or near entry point of home
- If vacant, one GPA will suffice, if occupied, two GPA's are required

Leave a Green Pool Advisory at or near entry point of home

Protecting Public Health Since 1928

Green Pool Advisory

- Citation of CA Health & Safety Code 2000-2067
- Fine of up to \$1,000 per day for non-compliance
- 48 Hour Notice – Sense of Urgency
- QR code and phone number to enroll in CV Mosquito Pool Program
- Homes with empty pools can enroll in the program and avoid a visit from a technician during length of enrollment if the pool is maintained in a dry condition

Protecting Public Health Since 1928

Role of Wetlands in Ecological and Human Health

Groundwater recharge	Essential habitat
Erosion control	Nutrient cycling
Temperature regulation	Native Culture
Water purification	Education
Carbon sequestration	Recreation
	Mental Health

The Tule Economy

Tule Bundle – 1.5 ft wide x 10 ft long
 15 Bundles - 1 Large Tule Boat
 40 Bundles – Average-Sized Tule Hut
 Annual Tule Use per Small Village - 500 people/5 people per family
 4000 bundles - 100 huts
 3000 bundles - 200 Boats

Tule Hut Tule Boat Cutting Tule in Trails for Gathering

RABIES IN CALIFORNIA

- Each year rabies is detected in ~250 animals throughout California
- approximately 4250 animals nationally

From Jan 1- Sept 30, 2025 a total of 183 animals have been reported from Alameda, Butte, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Lake, LA, Merced, Marin, Monterey, Napa, Orange, Placer, Riverside, Sacramento, San Bernardino, San Diego, SF, San Joaquin, San Luis Obispo, Santa Cruz, Santa Clara, Santa Cruz, Shasta, Sonoma, Stanislaus, Tehama, Tulare, Ventura, Yolo and Yuba Counties

Year	Bat	Skunk	Cat	Dog	Bobcat	Coyote	Fox	Horse	Sheep	Cattle	Raccoon	Total
2024	229	19	1	0	0	1	4	0	0	0	0	254
2023	179	19	0	0	0	0	4	0	0	0	0	202
2022	181	38	1	1	1	0	7	0	0	0	0	229
2021	187	29	0	0	0	0	4	0	0	0	0	220
2020	204	24	1	1	0	0	1	0	0	0	0	248

Let's Talk...Talking Points

- **Communicate** with other departments regarding current mosquito/vector related issues in your community
- **Rehearse** and have several talking points at the ready beforehand
- **Prepare** for working an outreach event as though you are preparing for an interview with the media
- **Practice** – have someone record you while asking questions

FRONTIER PRECISION — How You Measure Matters

Rodent Control Workflows (Core)

- Part of standard FieldSeeker Core
- Rodent Location layer
- Rodent Inspection layer
- Related to Rodent Location and Service Request

FRONTIER PRECISION — How You Measure Matters

Hylio Treatment Drones

- AG 210** BEST FOR GETTING THE JOB DONE
 - 2.4 lbs payload
 - UP TO 30 min flight time
 - 15 acres @ 100 ft
- AG 214** BEST FOR VERSATILITY
 - 4.7 lbs payload
 - UP TO 25 min flight time
 - UP TO 27.5 acres @ 100 ft
- AG 230** BEST FOR LARGE SCALE OPERATIONS
 - 8.0 lbs payload
 - UP TO 25 min flight time
 - UP TO 50 acres @ 100 ft
- AG 272** BEST FOR THE TALLEST
 - 18.0 lbs payload
 - UP TO 40 min flight time
 - UP TO 50 acres @ 100 ft

▲ Mobile device software for vector control ▼

VectorSurv's new interface

VectorSurv

Essentials of a Treatment Program

- Physical Tools

Unforeseen Impact

- Over 2,800 swimming pools impacted
- Over 1,400 swimming pools destroyed

Eaton Fire disaster zone, January 2025

Public Assistance Program and Policy Guide

- Mosquito abatement measures are eligible for support
- Eligibility requirements set by the Federal Emergency Management Agency (FEMA) for mosquito abatement → Appendix F
 - FEMA consults with CDC to determine eligibility
 - CDC reviews packet
 - FEMA funding only supports increased cost of mosquito abatement

Anatomy of an Effective AI Prompt

- 1. The Foundation**
 - Establish the AI's Persona
 - o Senior Biologist, Regulator
 - Provide a knowledge base
 - o Data, reports, project history
- 2. The Directive**
 - State a Clear Objective
 - o Use direct verbs
 - Strict Guardrails
 - o Tone, length, complexity
- 3. The Delivery**
 - Target Audiences
 - o Who will use or read the output
 - Pre-flight Check
 - o Instruct AI to ask for clarifying questions and missing information

Culicoides as a Vector for Disease

- *Culicoides*: small biting midges (1-3mm), "no-see-ums" (Vogge 2025)
- Females blood-feed for egg development similar to mosquitos (Vogge 2025)
- Vectors of multiple diseases such as Oropouche and Blue Tongue Virus (Mills 2017)
- Oropouche virus is primarily spread by a certain species (*C. paraensis*) (CDC 2025)
- Occurs primarily in South America but there is concern for spread within the United States (CDC 2025)
- Insight on abundance and distribution as well as species identification has grown increasingly important for disease prevention

My project looks to provide insight into the abundance and distribution of *Culicoides* within Fresno County as well as accurate species identifications

Figure 4. *Culicoides* size comparison (CDC)

