



MOSQUITO and VECTOR MANAGEMENT DISTRICT
of SANTA BARBARA COUNTY

DISEASE SURVEILLANCE REPORT

December 2024

Santa Barbara County Vector-borne Disease Surveillance

No dead birds from Santa Barbara County were reported to the state hotline in December. Despite 186 mosquito samples (4,231 mosquitoes total) submitted, there were no detections of West Nile virus (WNV) in the County in 2024. St. Louis encephalitis virus (SLE) and Western equine encephalitis virus (WEE) have never been documented in the County.

The District did not conduct any mosquito trapping in December as nighttime temperatures are too low for mosquitoes to be active and many species are inactive during the winter months.

2024 Tick Test Results

The California Department of Public Health has informed the District of 40 ticks, collected in early 2024, that tested positive for *Rickettsia*, *Anaplasma*, or *Borrelia* bacteria. The “*Borrelia burgdorferi sensu lato*” and “*Rickettsia* species” are likely not pathogenic, meaning they likely will not cause disease. *Anaplasma phagocytophilum* causes the disease human granulocytic anaplasmosis, and *Rickettsia philipii* causes Pacific Coast tick fever. Lyme disease is caused by *Borrelia burgdorferi sensu stricto*.

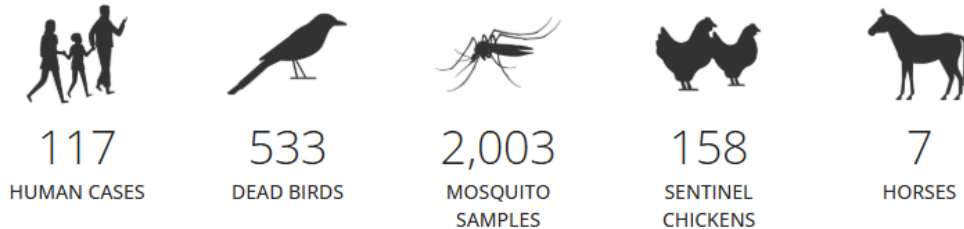
Location	Date Collected	Tick Species	# Ticks Collected	# of positive Ticks	Bacteria species
Snyder Trail, Paradise Road, Los Padres National Forest	2/22/2024	<i>Dermacentor occidentalis</i>	14	1	<i>Rickettsia</i> species
Toro Canyon County Park, Carpinteria	3/5/2024	<i>Dermacentor occidentalis</i>	99	4	<i>Rickettsia philipii</i>
		<i>Ixodes pacificus</i>	7	1	<i>Anaplasma phagocytophilum</i>
		<i>Ixodes pacificus</i>	7	1	<i>Borrelia burgdorferi sensu lato</i>
		<i>Dermacentor occidentalis</i>	99	9	<i>Rickettsia</i> species
Bella Vista Ranch Trail, Greenwell Preserve, Summerland	3/5/2024	<i>Dermacentor occidentalis</i>	60	13	<i>Rickettsia</i> species
		<i>Dermacentor occidentalis</i>	60	3	<i>Rickettsia philipii</i>
Sweetwater Trail, Lake Cachuma Recreation Area	3/5/2024	<i>Ixodes pacificus</i>	42	1	<i>Anaplasma phagocytophilum</i>
		<i>Dermacentor occidentalis</i>	36	6	<i>Rickettsia</i> species
Bodger Trail, Lompoc	3/5/2024	<i>Ixodes pacificus</i>	74	1	<i>Borrelia burgdorferi sensu lato</i>

* Visit <https://www.mvmdistrict.org/tick-talk> for an explanation of tick flagging and more information about ticks.

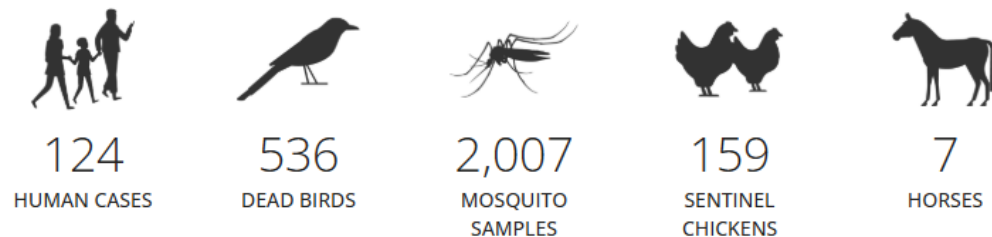
California Vector-borne Disease Surveillance

Weekly arbovirus bulletins from the California Department of Health have finished for the season. Thirty-two counties reported samples positive for West Nile virus in 2024. Of the 124 human cases of WNV, 95 were neuroinvasive, and 12 were fatal. There were an additional 16 asymptomatic blood donors. More than half of the 536 WNV-positive dead birds in California were collected in Santa Clara County. Thirty-four mosquito pools from five counties have tested positive for SLE; in 2023, there were 728 positive SLE samples across 15 counties. There have been no detections of WEE.

California WNV activity as of **November 22, 2024**



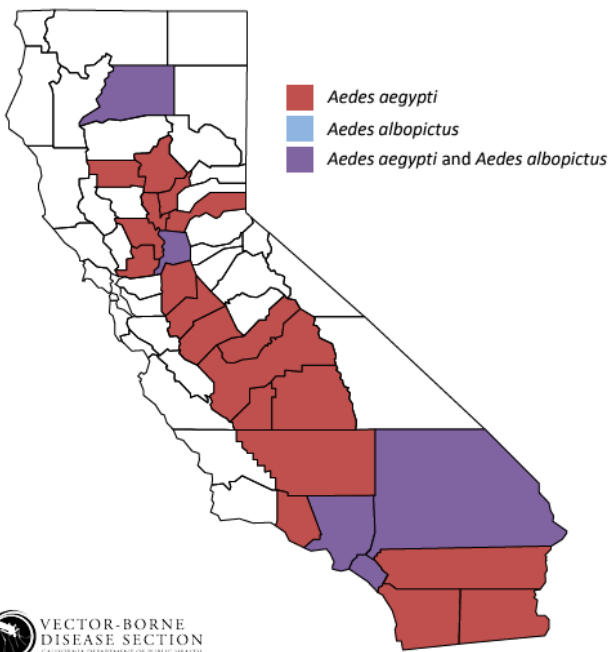
California WNV activity as of **December 13, 2024**



<https://westnile.ca.gov>

2023 & 2024 YTD West Nile Virus Comparisons		
	2023	2024
Total No. Dead Bird Reports	7,030	6,434
No. Positive Counties	42	32
No. Human Cases	354	123
No. Positive Dead Birds / No. Tested	849 / 1,953	535 / 1,789
No. Positive Mosquito Pools / No. Tested	4,518 / 52,375	2,006 / 48,241
No. Seroconversions / No. Tested	187 / 3,704	159 / 4,889

<https://westnile.ca.gov>



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 24 California counties, and *Aedes albopictus* is found in five.

There have now been 16 locally transmitted cases of dengue virus in Los Angeles County (12), San Bernardino County (1), and San Diego County (3) in 2024. Non-native *Aedes* mosquitoes, capable of vectoring dengue, Zika, chikungunya, and yellow fever are common in the Greater Los Angeles area. As of December 18, 2024, there have been 469 travel-related human dengue cases in California; there have been 20 travel-related cases of chikungunya virus and three travel-related cases of Zika virus. This year in California, 1,453 mosquito pools have tested negative for DENV, CHIKV, and ZIKA. There have been five cases of travel-related dengue in Santa Barbara County this year. Worldwide, the number of dengue cases has more than doubled—6.5 million in 2023 to 14 million in 2024 (10,000 deaths).



Adult Female



Adult Male



Nymph



Larvae

Pacific Coast Tick, *Dermacentor occidentalis*

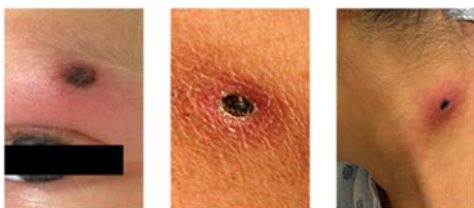
Local Pathogenic Tick-borne *Rickettsia* Bacteria

Rocky Mountain Spotted Fever (RMSF), *Rickettsia rickettsii*

Vectored by the Pacific coast tick (*Dermacentor occidentalis*), the American dog tick (*Dermacentor variabilis*), Western American dog tick (*Dermacentor similis*), or the brown dog tick (*Rhipicephalus sanguineus*) if an infected tick is attached 4 to 6 hours.

Symptoms: 2 to 14 days after tick bite, fever, rash, muscle pain/weakness, nausea, headache, blood vessel damage, and possible kidney failure and death if not treated with antibiotics

Occurrence: 1 to 7 cases in California per year; more common in Appalachia than in the Rocky Mountains



Eschars (dead tissue) caused by Pacific Coast tick fever



Rocky Mountain spotted fever rash

Pacific Coast Tick Fever, *Rickettsia philipii*

Vectored by the Pacific coast tick, *Dermacentor occidentalis*

Symptoms: 2 to 7 days after tick bite a skin lesion called an eschar develops; fever, headache, and swollen lymph nodes

Occurrence: 0 to 3 cases in California per year

Rickettsia felis and *Rickettsia typhi* are related bacterial pathogens transmitted by fleas.

The District advises to avoid tick bites by wearing repellent, staying on hiking trails, avoiding contact with vegetation, and checking for ticks after outdoor activity. Pets should also be inspected for ticks after visiting wilderness areas. To remove an attached tick, grip it with tweezers close to the skin and pull straight out (no twisting, chemicals, smothering with oils or ointments, or fire should be used to remove ticks).

Padgett KA, Bonilla D, Eremeeva ME, Glaser C, Lane RS, Porse CC, et al. (2016) The Eco-epidemiology of Pacific Coast Tick Fever in California. PLoS Negl Trop Dis 10(10): e0005020. <https://doi.org/10.1371/journal.pntd.0005020>