



MOSQUITO and VECTOR MANAGEMENT DISTRICT of SANTA BARBARA COUNTY

DISEASE SURVEILLANCE REPORT

November 2022

Vector-borne Disease Surveillance

The mosquito trapping season ended with zero mosquito samples testing positive for mosquito-borne viruses in Santa Barbara County.

Mosquitoes

Site	Date	# of Mosquitoes*	Type of Trap	# of Traps	Mosquitoes per Trap Night	Pools Submitted	WSW Test Result
Shoreline/More Mesa, 93111	10/28-11/1	26	Gravid	2	3.25	2	negative
Mission Creek, 93101	11/2-11/4	29	Gravid	1	14.5	1	negative

BGS2=Biogents Sentinel 2

BGP=Biogents Pro

EVS=encephalitis surveillance trap (CO²)

WSW=West Nile virus, St. Louis Encephalitis virus, and Western Equine Encephalitis virus

*Color indicates the virus-transmitting ability of some or all of the mosquito species caught in the traps:

Brown = high (example: *Aedes aegypti*, *Culex tarsalis*); Purple = moderate; Blue = low. For specific trap collection data, please email a request to: info@mvmdistrict.org.

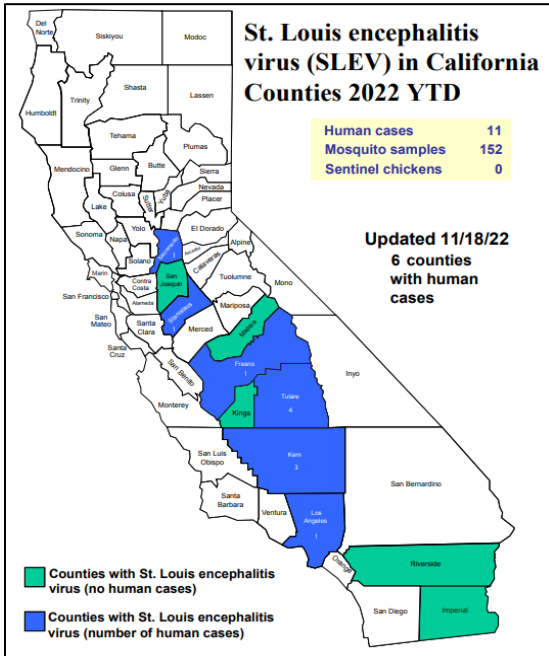
Ticks

Site	Date	<i>Ixodes pacificus</i> male	<i>Ixodes pacificus</i> female	<i>Dermacentor occidentalis</i> male	<i>Dermacentor occidentalis</i> female	<i>Dermacentor similis</i> * male	<i>Dermacentor similis</i> * female
Toro Canyon Trail, 93108	11/28	1	0	0	0	0	0
Lake Los Carneros, 93117	11/28	0	0	0	0	0	0
Carpinteria Bluffs, 93013	11/29	0	0	0	0	0	0
UCSB lagoon, 93106	11/30	0	0	0	0	0	0

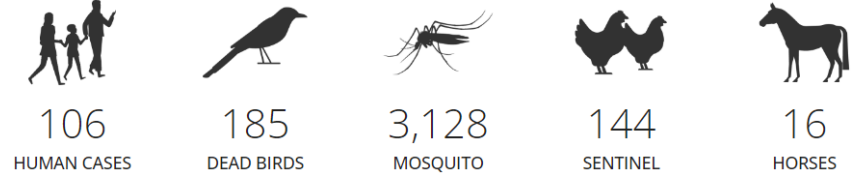
*formerly *Dermacentor variabilis*

California Arbovirus Detection

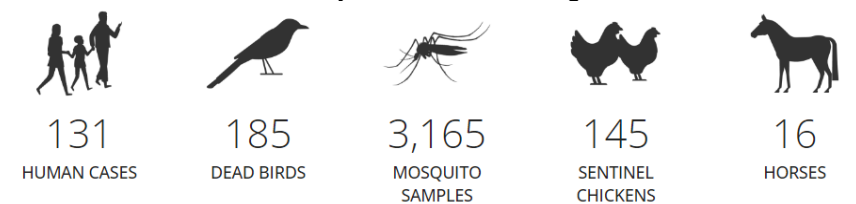
In November, most California districts or counties reduced their surveillance activity. Throughout California, 37 WNV positive mosquito pools were reported for a 2022 total of 3,165 positive pools. The number of positive dead birds remains 185. Out of the total of 131 human WNV cases, 10 were fatal; 13 additional cases were asymptomatic blood donors. One additional mosquito pool tested positive for Saint Louis encephalitis virus in November, bringing the 2022 total to 153; there have been 11 human cases. No detections of Western equine encephalitis virus have been reported in California this year.



2022 West Nile Virus Activity in California through October



2022 West Nile Virus Activity in California through November



In November, zero dead birds were reported in Santa Barbara County. Seventeen mosquito pools tested negative for encephalitis viruses.

Invasive *Aedes* Mosquito and Zika Virus Update

No *Aedes aegypti* mosquitoes or other invasive *Aedes* species have been detected in Santa Barbara County, thus far in 2022.

Aedes aegypti mosquitoes are present in 24 California counties. *Aedes albopictus* is present in four counties. *Aedes notoscriptus* occurs in L.A., Orange and San Diego Counties. To date, 666 mosquito pools have tested negative for Zika, dengue, and chikungunya in California in 2022.

One locally-acquired human case of dengue virus has been reported in Maricopa County, Arizona (Phoenix area). After the human case was found, a mosquito sample from the area tested positive for the virus. County employees went door-to-door in the area to educate the residents and offer voluntary free at-home blood tests. About 25% of people infected will show dengue fever symptoms, and about 5% become severely ill.

The Mosquito District learned recently that, in the summer of 2022, there were two human cases of dengue virus in Santa Barbara County, but both infections were most likely travel-related.



Simulium black fly



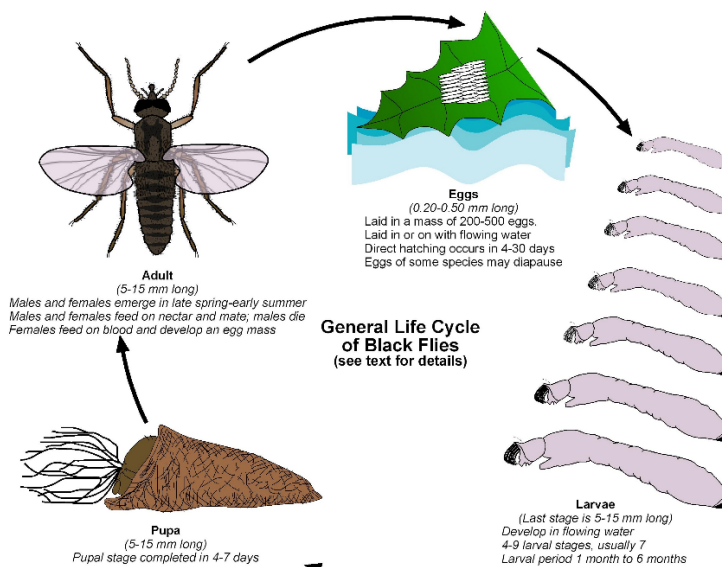
Black fly mouthparts cut skin and absorb blood rather than piercing and sucking like mosquitoes

Black Flies *Simulium*

Simulium is a genus of about 1,800 species of biting flies commonly called buffalo gnats (for their hump-backed appearance) or black flies (although not all species are black). They are 5 to 15 mm long and often have some light-colored leg segments. Eggs are laid in flowing, rather than standing, water. Larvae attach themselves to rocks using sucker-like discs and use their mouth brushes to filter food out of the passing water; larvae can catch larvicide particles if the larvicide is applied upstream.

Like mosquitoes, carbon dioxide attracts black flies to the District's dry ice-baited traps. They have been caught in our traps at Paradise Road, Evergreen Park, the Goleta slough, Santa Monica Creek, Atascadero Creek, and Stenner Creek (SLO County). Female black flies require a blood meal for egg development, while both males and females feed on flower nectar.

In Africa, *Simulium* flies transmit *Onchocerca volvulus* worms, which cause the disease known as river blindness. In North America, large populations of black flies can reduce the quality of life for people or weaken livestock. DEET, IR3535, and picaridin are the most effective repellants for black flies. Wearing long sleeves and pants can also prevent biting.



Simuliidae life cycle. Image from Scott Charlesworth, Purdue University