

California Arbovirus Surveillance Bulletin #15

Week 28 Friday, July 15, 2022



Weekly Update

Humans

West Nile virus

A total of 2 human cases of West Nile virus (WNV) illness were reported this week from 2 counties: Kings (1), and Stanislaus (1). **This is the first human WNV case reported from Kings and Stanislaus counties this year.** In 2022, a total of 2 WNV human cases have been reported from 2 counties. Of the 2 cases, 1 (50%) had neuroinvasive illness. The median age of case patients was 60.5 years (range: 40-81 years) and 2 (100%) of the case patients were male. The dates of symptom onset ranged from May 24 to June 2. Additional asymptomatic infections (not identified via blood donor screening) have not been reported. At this time last year, 2 WNV cases had been reported from 2 counties.

St. Louis encephalitis virus

A new human case (1) of St. Louis encephalitis virus (SLEV) was reported this week from Stanislaus County. **This is the first SLEV human case from Stanislaus County this year.** In 2022, 1 WNV human case has been reported from 1 county. At this time last year, 0 SLEV cases had been reported.

Dead Birds

A total of 4 WNV positive dead birds were reported this week from 2 counties: Sacramento (3), and Yolo (1). In 2022, 24 WNV positive dead birds have been reported from 9 counties. At this time last year, 68 WNV positive dead birds had been reported from 9 counties.

Mosquito Pools

West Nile virus

A total of 134 WNV positive mosquito pools were reported this week from 18 counties: Butte (2), Fresno (30), Kern (2), Kings (7), Los Angeles (3), Madera (1), Orange (5), Placer (9), Riverside (21), Sacramento (2), San Bernardino (4), San Joaquin (8), Santa Clara (6), Shasta (4), Solano (3), Sutter (5), Tulare (19), and Yolo (3) counties. **These are the first detections of WNV activity in Butte County this year.** In 2022, 356 WNV positive mosquito pools have been reported from 19 counties. At this time last year, 283 WNV positive mosquito pools had been reported from 17 counties.

St. Louis encephalitis virus

A total of 2 St. Louis encephalitis virus (SLEV) positive mosquito pools were reported this week: Imperial (1) and Tulare (1) counties. **This is the first detection of SLEV activity in Tulare County this year.** In 2022, 4 positive mosquito pools from Imperial (2), Kings (1), and Tulare (1) counties have been reported. At this time last year, 2 SLEV positive mosquito pools had been reported from two counties.

Sentinel Chickens

A single (1) WNV positive chicken was reported this week from Merced County. **This is the first WNV positive chicken reported from Merced County this year.** In 2022, 1 WNV positive chicken had been reported from 1 county. At this time last year, 0 WNV positive chickens had been reported.

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2021 & 2022 YTD West Nile Virus Comparisons		
	2021	2022
Total No. Dead Bird Reports	3,108	2,647
No. Positive Counties	20	22
No. Human Cases	2	2
No. Positive Dead Birds / No. Tested	68 / 939	24 / 659
No. Positive Mosquito Pools / No. Tested	283 / 14,925	356 / 14,133
No. Seroconversions / No. Tested	0 / 2,607	1 / 2,078

YTD WNV Activity by Element and County, 2022					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Butte				2	
Contra Costa			1		
Fresno			2	90	
Kern		2		34	
Kings	1			19	
Los Angeles			6	24	
Madera				2	
Merced			1	1	1
Nevada			1		
Orange				8	
Placer				12	
Riverside				33	
Sacramento			9	6	
San Bernardino				6	
San Joaquin				29	
Santa Clara				7	
Shasta				6	
Stanislaus	1				
Solano			1	4	
Sutter			1	6	
Tulare				64	
Yolo			2	3	
Totals	2	2	24	356	1

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TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	2	1	0
	YTD	2	1	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	48	4
	YTD	659	24

Sentinel Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	240	1	0	0
	YTD	2,078	1	0	0

Mosquito Pools

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	122 / 1,585	2 / 1,458	0 / 1,458	0 / 68	0 / 68	0 / 68
		YTD	356 / 14,133	4 / 13,745	0 / 13,710	0 / 280	0 / 280	0 / 280

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Sacramento	Sacramento-Yolo MVCD	Citrus Heights	95621	California Scrub-Jay	7/7/2022	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Unknown-hawk	7/9/2022	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Unknown-hawk	7/11/2022	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95618	American Crow	7/12/2022	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO 146	152	Culex tarsalis	Palermo	50	CO2	7/5/2022	WNV
Butte	BUCO 29	177	Culex tarsalis	Dayton	50	CO2	7/6/2022	WNV
Fresno	CNSL 1761	52	Culex quinquefasciatus	Fresno	50	GRVD	7/6/2022	WNV
Fresno	CNSL 1845	549	Culex quinquefasciatus	Fresno	45	GRVD	7/6/2022	WNV
Fresno	CNSL 1990	555	Culex quinquefasciatus	Fresno	15	GRVD	7/8/2022	WNV
Fresno	CNSL 2152	553	Culex tarsalis	Sanger	50	BGSENT	7/7/2022	WNV
Fresno	CNSL 9025	550	Culex quinquefasciatus	Clovis	50	GRVD	7/6/2022	WNV

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Fresno	CNSL 9229	51	Culex quinquefasciatus	Clovis	50	BGSENT	7/6/2022	WNV
Fresno	FRNO 116	494	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 116	497	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 116	498	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 116	499	Culex quinquefasciatus	Fresno	13	GRVD	7/13/2022	WNV
Fresno	FRNO 14	493	Culex quinquefasciatus	Fresno	10	GRVD	7/13/2022	WNV
Fresno	FRNO 15	475	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 15	476	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 15	477	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 15	478	Culex quinquefasciatus	Fresno	40	GRVD	7/13/2022	WNV
Fresno	FRNO 165	501	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 165	502	Culex quinquefasciatus	Fresno	46	GRVD	7/13/2022	WNV
Fresno	FRNO 19	455	Culex quinquefasciatus	Fresno	23	GRVD	7/7/2022	WNV
Fresno	FRNO 197	479	Culex quinquefasciatus	Fresno	9	GRVD	7/13/2022	WNV
Fresno	FRNO 238	491	Culex quinquefasciatus	Fresno	37	GRVD	7/13/2022	WNV
Fresno	FRNO 263	505	Culex quinquefasciatus	Fresno	26	BGSENT	7/13/2022	WNV
Fresno	FRNO 270	456	Culex quinquefasciatus	Fresno	28	GRVD	7/7/2022	WNV
Fresno	FRNO 273	472	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 273	473	Culex quinquefasciatus	Fresno	50	GRVD	7/13/2022	WNV
Fresno	FRNO 279	457	Culex quinquefasciatus	Fresno	50	GRVD	7/7/2022	WNV
Fresno	FRNO 279	458	Culex quinquefasciatus	Fresno	43	GRVD	7/7/2022	WNV
Fresno	FRNO 35	459	Culex quinquefasciatus	Fresno	50	GRVD	7/7/2022	WNV
Fresno	FRNO 35	460	Culex quinquefasciatus	Fresno	49	GRVD	7/7/2022	WNV
Fresno	FRNO 8004	480	Culex quinquefasciatus	Fresno	46	GRVD	7/13/2022	WNV
Fresno	FRNO 89	464	Culex quinquefasciatus	Fresno	30	GRVD	7/7/2022	WNV
Kern	KERN 125	357	Culex quinquefasciatus	Bakersfield	25	BGSENT	7/8/2022	WNV
Kern	KERN 66	358	Culex quinquefasciatus	Bakersfield	47	BGSENT	7/8/2022	WNV
Kings	KNGS 3115	71	Culex tarsalis	Hanford	50	CO2	7/6/2022	WNV
Kings	KNGS 3115	72	Culex tarsalis	Hanford	50	CO2	7/6/2022	WNV
Kings	KNGS 3115	73	Culex tarsalis	Hanford	50	CO2	7/6/2022	WNV
Kings	KNGS 3120	76	Culex tarsalis	Hanford	50	CO2	7/7/2022	WNV
Kings	KNGS 3120	77	Culex tarsalis	Hanford	50	CO2	7/7/2022	WNV
Kings	KNGS 3123	74	Culex tarsalis	Armona	45	CO2	7/7/2022	WNV
Kings	KNGS 3127	82	Culex pipiens	Corcoran	50	CO2	7/8/2022	WNV
Los Angeles	GRLA 2593	5531	Culex quinquefasciatus	San Marino	21	GRVD	7/7/2022	WNV
Los Angeles	GRLA 2675	5540	Culex quinquefasciatus	Granada Hills	33	GRVD	7/8/2022	WNV
Los Angeles	GRLA 3046	474	Culex quinquefasciatus	Bellflower	50	GRVD	7/7/2022	WNV
Madera	MADR 1109	222	Culex tarsalis	Madera	50	CO2	7/6/2022	WNV
Orange	ORCO 1005	1966	Culex quinquefasciatus	Buena Park	12	GRVD	7/12/2022	WNV
Orange	ORCO 323	1881	Culex quinquefasciatus	Buena Park	47	GRVD	7/6/2022	WNV
Orange	ORCO 323	2012	Culex quinquefasciatus	Buena Park	30	GRVD	7/12/2022	WNV
Orange	ORCO 325	2022	Culex quinquefasciatus	La Habra	32	GRVD	7/12/2022	WNV
Orange	ORCO 326	2007	Culex quinquefasciatus	La Habra	8	GRVD	7/12/2022	WNV
Placer	PLCR 139	792	Culex tarsalis	Roseville	50	CO2	7/12/2022	WNV
Placer	PLCR 191218	805	Culex tarsalis	Roseville	50	CO2	7/12/2022	WNV
Placer	PLCR 191373	681	Culex tarsalis	Roseville	50	CO2	7/5/2022	WNV
Placer	PLCR 191373	801	Culex tarsalis	Unknown	50	CO2	7/12/2022	WNV
Placer	PLCR 194232	813	Culex tarsalis	Pleasant Grove	50	CO2	7/12/2022	WNV
Placer	PLCR 197802	783	Culex tarsalis	Elverta	50	CO2	7/12/2022	WNV
Placer	PLCR 25	785	Culex tarsalis	Lincoln	50	CO2	7/12/2022	WNV
Placer	PLCR 25	786	Culex tarsalis	Lincoln	50	CO2	7/12/2022	WNV
Placer	PLCR 25	788	Culex tarsalis	Lincoln	50	CO2	7/12/2022	WNV
Riverside	COAV 0	3624	Culex tarsalis	Indio	19	CO2	7/8/2022	WNV
Riverside	COAV 0	3675	Culex tarsalis	Indio	7	CO2	7/8/2022	WNV
Riverside	COAV 0	3827	Culex tarsalis	Indio	24	CO2	7/15/2022	WNV
Riverside	COAV 0	3833	Culex tarsalis	Indio	50	CO2	7/15/2022	WNV
Riverside	COAV 27	3836	Culex tarsalis	Thermal	50	CO2	7/15/2022	WNV
Riverside	COAV 35	3817	Culex tarsalis	Mecca	50	CO2	7/14/2022	WNV
Riverside	COAV 37	3648	Culex tarsalis	Mecca	50	CO2	7/8/2022	WNV

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Riverside	COAV 48	3784	Culex tarsalis	Mecca	50	CO2	7/12/2022	WNV
Riverside	COAV 48	3786	Culex tarsalis	Mecca	26	CO2	7/12/2022	WNV
Riverside	COAV 55	3666	Culex tarsalis	Mecca	50	CO2	7/14/2022	WNV
Riverside	COAV 55	3667	Culex tarsalis	Mecca	50	CO2	7/14/2022	WNV
Riverside	COAV 55	3668	Culex tarsalis	Mecca	50	CO2	7/14/2022	WNV
Riverside	COAV 55	3669	Culex tarsalis	Mecca	50	CO2	7/14/2022	WNV
Riverside	COAV 55	3670	Culex tarsalis	Mecca	50	CO2	7/14/2022	WNV
Riverside	COAV 55	3792	Culex tarsalis	Mecca	50	CO2	7/12/2022	WNV
Riverside	COAV 55	3794	Culex tarsalis	Mecca	50	CO2	7/12/2022	WNV
Riverside	COAV 55	3795	Culex tarsalis	Mecca	50	CO2	7/12/2022	WNV
Riverside	COAV 55	3797	Culex tarsalis	Mecca	50	CO2	7/12/2022	WNV
Riverside	COAV 55	3798	Culex tarsalis	Mecca	38	CO2	7/12/2022	WNV
Riverside	COAV 56	3823	Culex tarsalis	North Shore	50	CO2	7/14/2022	WNV
Riverside	RIVR 90	17	Culex tarsalis	Nuevo	50	CO2	6/29/2022	WNV
Sacramento	SAYO 214053	1880	Culex pipiens	Carmichael	8	GRVD	7/1/2022	WNV
Sacramento	SAYO 223023	1585	Culex pipiens	Rancho Cordova	47	GRVD	6/24/2022	WNV
San Bernardino	WVAL 4613	918	Culex quinquefasciatus	Upland	12	GRVD	7/12/2022	WNV
San Bernardino	WVAL 4721	934	Culex quinquefasciatus	Chino	14	BGSENT	7/13/2022	WNV
San Bernardino	WVAL 4996	944	Culex quinquefasciatus	Rancho Cucamonga	23	BGSENT	7/14/2022	WNV
San Bernardino	WVAL 7002	916	Culex quinquefasciatus	Montclair	8	GRVD	7/12/2022	WNV
San Joaquin	SJCM 8018	907	Culex tarsalis	Stockton	100	CO2	7/12/2022	WNV
San Joaquin	SJCM 8018	908	Culex tarsalis	Stockton	100	CO2	7/12/2022	WNV
San Joaquin	SJCM 8018	909	Culex tarsalis	Stockton	100	CO2	7/12/2022	WNV
San Joaquin	SJCM 8018	912	Culex tarsalis	Stockton	100	CO2	7/12/2022	WNV
San Joaquin	SJCM 8074	1007	Culex tarsalis	Morada	12	CO2	7/14/2022	WNV
San Joaquin	SJCM 8078	845	Culex tarsalis	Stockton	27	CO2	7/8/2022	WNV
San Joaquin	SJCM 8206	949	Culex tarsalis	Lodi	50	CO2	7/12/2022	WNV
San Joaquin	SJCM 8206	953	Culex tarsalis	Lodi	50	CO2	7/12/2022	WNV
Santa Clara	STCL 31766	1849	Culex tarsalis	Sunnyvale	9	CO2-EVS	7/11/2022	WNV
Santa Clara	STCL 31766	1912	Culex pipiens	Sunnyvale	14	CO2-EVS	7/13/2022	WNV
Santa Clara	STCL 31809	1835	Culex pipiens	Sunnyvale	12	GRVD	7/11/2022	WNV
Santa Clara	STCL 31809	1914	Culex pipiens	Sunnyvale	24	GRVD	7/13/2022	WNV
Santa Clara	STCL 31811	1917	Culex pipiens	Sunnyvale	18	GRVD	7/13/2022	WNV
Santa Clara	STCL 32225	1457	Culex pipiens	Milpitas	13	CO2-EVS	6/24/2022	WNV
Shasta	SHAS 246	191	Culex tarsalis	Redding	46	CO2	7/13/2022	WNV
Shasta	SHAS 311	195	Culex pipiens	Redding	15	CO2	7/13/2022	WNV
Shasta	SHAS 349	176	Culex tarsalis	Redding	23	CO2	7/12/2022	WNV
Shasta	SHAS 375	149	Culex tarsalis	Bella Vista	21	CO2	7/7/2022	WNV
Solano	SOLA 162	126	Culex tarsalis	Vacaville	6	CO2	7/12/2022	WNV
Solano	SOLA 163	127	Culex tarsalis	Vacaville	5	CO2	7/12/2022	WNV
Solano	SOLA 163	129	Culex stigmatosoma	Vacaville	4	CO2	7/12/2022	WNV
Sutter	SUYA 14	241	Culex tarsalis	Sutter	50	REST	7/11/2022	WNV
Sutter	SUYA 24	237	Culex tarsalis	Yuba City	50	REST	7/11/2022	WNV
Sutter	SUYA 24	238	Culex tarsalis	Yuba City	50	REST	7/11/2022	WNV
Sutter	SUYA 27	222	Culex tarsalis	Tierra Buena	32	CO2	7/13/2022	WNV
Sutter	SUYA 9	214	Culex tarsalis	Sutter	26	CO2	7/12/2022	WNV
Tulare	DLTA 64074	1402	Culex quinquefasciatus	Dinuba	31	GRVD	7/8/2022	WNV
Tulare	DLTA 6408	1397	Culex quinquefasciatus	Dinuba	29	GRVD	7/8/2022	WNV
Tulare	DLTA 6417	1403	Culex quinquefasciatus	Dinuba	16	GRVD	7/8/2022	WNV
Tulare	DLTA 84274	1382	Culex quinquefasciatus	Visalia	12	GRVD	7/8/2022	WNV
Tulare	DLTA 8436	1370	Culex quinquefasciatus	Visalia	15	GRVD	7/8/2022	WNV
Tulare	DLTA 85194	1369	Culex quinquefasciatus	Visalia	30	GRVD	7/8/2022	WNV
Tulare	DLTA 85194	1413	Culex quinquefasciatus	Visalia	11	BGSENT	7/8/2022	WNV
Tulare	DLTA 8521	1372	Culex quinquefasciatus	Visalia	35	GRVD	7/8/2022	WNV
Tulare	DLTA 8534	1383	Culex quinquefasciatus	Visalia	11	GRVD	7/8/2022	WNV
Tulare	DLTA 95044	1393	Culex quinquefasciatus	Visalia	42	GRVD	7/8/2022	WNV
Tulare	DLTA 950924	1364	Culex quinquefasciatus	Visalia	50	CO2	7/8/2022	WNV
Tulare	DLTA 950924	1366	Culex tarsalis	Visalia	13	CO2	7/8/2022	WNV
Tulare	DLTA 950931	1368	Culex quinquefasciatus	Visalia	31	CO2	7/8/2022	WNV

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Tulare	TLRE 192412	14	Culex quinquefasciatus	Visalia	50	GRVD	6/29/2022	WNV
Tulare	TLRE 192507	13	Culex quinquefasciatus	Visalia	50	GRVD	6/29/2022	WNV
Tulare	TLRE 192507	16	Culex quinquefasciatus	Visalia	50	GRVD	6/29/2022	WNV
Tulare	TLRE 202404	2	Culex quinquefasciatus	Tulare	50	GRVD	6/14/2022	WNV
Tulare	TLRE 202411	25	Culex quinquefasciatus	Tulare	50	GRVD	7/6/2022	WNV
Tulare	TLRE 202415	23	Culex quinquefasciatus	Tulare	50	GRVD	7/1/2022	WNV
Yolo	SAYO 125030	2141	Culex pipiens	Woodland	50	GRVD	7/8/2022	WNV
Yolo	SAYO 125030	2142	Culex pipiens	Woodland	46	GRVD	7/8/2022	WNV
Yolo	SAYO 146002	2212	Culex tarsalis	Davis	50	CO2	7/12/2022	WNV

TEST PROTOCOLS

Humans:

Specimens are tested by local laboratories with an IgM or IgG immunofluorescent assay (IFA) and/or an IgM enzyme immunoassay (EIA). Specimens with inconclusive results are forwarded to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL) for further testing with a plaque reduction neutralization test (PRNT).

Dead Birds

Oral swab samples collected from bird carcasses are tested at the UC Davis Arbovirus Research and Training laboratory (DART) or at a local agency for West Nile virus by RT-qPCR.

Sentinel Chickens:

Dried blood spot samples from sentinel chickens are tested at the California Department of Public Health Vector-Borne Disease Laboratory for IgG antibodies to West Nile, St. Louis encephalitis, and western equine encephalomyelitis viruses by an EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

Mosquito Pools:

Mosquito pools are tested at DART or at a local agency for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex RT-qPCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested at DART for chikungunya, dengue, and Zika viral RNA by a separate RT-qPCR.

Website Information: For updated information on WNV in California, please visit the California WNV website, <https://westnile.ca.gov>, or the California Vector-Borne Disease Surveillance System website, <https://maps.vectorsurv.org>.

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