

California Arbovirus Surveillance Bulletin #26

Week 39 Friday, September 30, 2022



WEEKLY UPDATE

Humans

West Nile virus

A total of 15 cases of West Nile virus (WNV) illness were reported this week from 8 counties: Fresno (1), Kern (1), Kings (2), Los Angeles (4), Madera (1), Merced (3), Orange (1), and Stanislaus (2). In 2022, a total of 81 cases have been reported from 16 counties. Of the 81 cases, 60 (74%) had neuroinvasive illness and 7 (9%) were fatal. The median age of the cases was 62 years and 50 (62%) were male. The dates of symptom onset ranged from April 11 to September 20. In addition to the 81 WNV cases, 9 asymptomatic WNV-positive blood donors have been reported from 4 counties: Fresno (3), Kern (1), Los Angeles (4), and San Joaquin (1). At this time last year, 62 WNV cases had been reported from 17 counties.

St. Louis encephalitis virus

A single (1) human case of St. Louis encephalitis virus (SLEV) was reported this week from Tulare County. In 2022, 6 SLEV human cases have been reported from 4 counties: Fresno (1), Kern (1), Stanislaus (1), and Tulare (3). At this time last year, 1 SLEV case had been reported from one county.

Dead Birds

A total of 12 WNV positive dead birds were reported this week from 5 counties: Los Angeles (3), Riverside (1), Sacramento (2), San Bernardino (1), and Santa Clara (5). In 2022, 166 WNV positive dead birds have been reported from 22 counties. At this time last year, 198 WNV positive dead birds had been reported from 19 counties.

Mosquito Pools

West Nile virus

A total of 108 WNV positive mosquito pools were reported this week from 11 counties: Fresno (7), Kern (4), Los Angeles (30), Madera (1), Riverside (4), Sacramento (2), San Bernardino (4), San Joaquin (20), Shasta (1), Stanislaus (5), and Tulare (30). In 2022, 2,925 WNV positive mosquito pools have been reported from 25 counties. At this time last year, 2,191 WNV positive pools had been reported from 25 counties.

St. Louis encephalitis virus

A total of 15 SLEV positive mosquito pools were reported this week from 5 counties Fresno (5), Kern (2), Madera (6), Riverside (1), and Tulare (1). In 2022, 131 SLEV positive mosquito pools from 9 counties have been reported: Fresno (11), Imperial (5), Kern (6), Kings (27), Los Angeles (1), Madera (15), Riverside (54), San Joaquin (1), and Tulare (11). At this time last year, 36 SLEV positive pools had been reported from 8 counties.

Sentinel Chickens

A total of 4 WNV positive chickens were reported this week from 3 counties: Butte (1), Los Angeles (1) and Tehama (2). In 2022, 123 WNV positive chickens have been reported from 13 counties. At this time last year, 79 WNV positive chickens had been reported from 9 counties.

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2021 & 2022 YTD West Nile Virus Comparisons		
	2021	2022
Total No. Dead Bird Reports	4,500	4,138
No. Positive Counties	33	31
No. Human Cases	62	81
No. Positive Dead Birds / No. Tested	198 / 1,420	166 / 1,125
No. Positive Mosquito Pools / No. Tested	2,191 / 33,726	2,925 / 34,191
No. Seroconversions / No. Tested	79 / 4,924	123 / 4,384

YTD WNV Activity by Element and County, 2022					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Butte	3		2	39	27
Colusa					3
Contra Costa			1	2	5
Fresno	14		2	291	
Imperial				1	
Kern	10	3		97	
Kings	5			105	
Lake			2	7	3
Los Angeles	12		37	441	14
Madera	2		2	127	
Merced	6		1	20	16
Napa				1	
Nevada		1	1		
Orange	4		1	31	
Placer			5	88	
Riverside			3	116	
Sacramento		1	37	40	6
San Bernardino			7	79	
San Joaquin	3	1	1	197	
San Luis Obispo		1			
Santa Clara			22	21	
Shasta			1	39	1
Solano	2		9	12	
Sonoma	1				
Stanislaus	8			65	
Sutter			4	31	16
Tehama	2	1			6
Tulare	5	3	2	999	10
Ventura			1		
Yolo	3		24	64	3
Yuba	1		1	12	13
Totals	81	11	166	2,925	123

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TESTING SUMMARIES

		WNV	SLEV	WEEV
Human Cases	Week	15	1	0
	YTD	81	6	0

Positive / Total Tested							
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA

Dead Birds	Week	12 / 22
	YTD	166 / 1,125

Chicken Sera	Week	4 / 180	0 / 180	0 / 180
	YTD	123 / 4,384	0 / 4,384	0 / 4,384

Mosquito Pools	Week	108 / 1,390	15 / 1,392	0 / 1,391	0 / 0	0 / 0	0 / 0
	YTD	2,925 / 34,191	131 / 30,785	0 / 29,325	0 / 351	0 / 351	0 / 351

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Greater Los Angeles Co VCD - SFS	Long Beach	90808	American Crow	9/20/2022	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	Long Beach	90808	Unknown - Crow or Raven	9/23/2022	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	Los Angeles	90011	Unknown - Crow or Raven	9/23/2022	WNV
Riverside	Northwest Mosquito VCD	Riverside	92506	House Finch	9/15/2022	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Crow	9/19/2022	WNV
Sacramento	Sacramento-Yolo MVCD	North Highlands	95660	American Crow	9/21/2022	WNV
San Bernardino	West Valley MVCD	Ontario	91762	American Crow	9/26/2022	WNV
Santa Clara	Santa Clara Co VCD	Los Altos	94024	American Crow	9/22/2022	WNV
Santa Clara	Santa Clara Co VCD	Mountain View	94040	American Crow	9/23/2022	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95129	American Crow	9/28/2022	WNV
Santa Clara	Santa Clara Co VCD	Santa Clara	95050	American Crow	9/21/2022	WNV
Santa Clara	Santa Clara Co VCD	Sunnyvale	94086	American Crow	9/26/2022	WNV

Mosquito Pools

County	Site code	Pool #	Species	City	# in Pool	Trap type	Collected	Virus
Fresno	CNSL 1070	647	Cx. quinquefasciatus	Fresno	50	GRVD	9/21/2022	WNV
Fresno	CNSL 1957	652	Cx. quinquefasciatus	Fresno	50	GRVD	9/21/2022	SLEV
Fresno	CNSL 6166	658	Cx. quinquefasciatus	Laton	35	GRVD	9/22/2022	WNV
Fresno	CNSL 6166	658	Cx. quinquefasciatus	Laton	35	GRVD	9/22/2022	SLEV
Fresno	CNSL 6323	646	Cx. tarsalis	Riverdale	48	CO2	9/20/2022	WNV
Fresno	CNSL 6365	656	Cx. quinquefasciatus	Laton	27	GRVD	9/22/2022	WNV
Fresno	FRNO 219	946	Cx. quinquefasciatus	Fresno	50	GRVD	9/21/2022	WNV

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Fresno	FRWS 10006	374	Cx. tarsalis	Dos Palos	50	CO2	9/27/2022	WNV
Fresno	FRWS 1101	366	Cx. tarsalis	Dos Palos	50	CO2	9/27/2022	WNV
Fresno	FRWS 4102	363	Cx. tarsalis	Kerman	50	CO2	9/27/2022	SLEV
Fresno	FRWS 4102	364	Cx. tarsalis	Kerman	50	CO2	9/27/2022	SLEV
Fresno	FRWS 5110	360	Cx. tarsalis	Tranquillity	50	CO2	9/27/2022	SLEV
Kern	DLNO 197	208	Cx. quinquefasciatus	Delano	22	BGSENT	9/23/2022	SLEV
Kern	KERN 111	471	Cx. quinquefasciatus	Arvin	50	CO2	9/20/2022	WNV
Kern	KERN 12	474	Cx. quinquefasciatus	Bakersfield	31	GRVD	9/21/2022	SLEV
Kern	KERN 2022	476	Cx. quinquefasciatus	Shafter	47	GRVD	9/22/2022	WNV
Kern	KERN 2025	472	Cx. quinquefasciatus	Bakersfield	45	GRVD	9/21/2022	WNV
Kern	KERN 36	468	Cx. tarsalis	Bakersfield	50	CO2	9/20/2022	WNV
Los Angeles	GRLA 2033	5911	Cx. quinquefasciatus	Tujunga	23	GRVD	9/22/2022	WNV
Los Angeles	GRLA 2097	823	Cx. quinquefasciatus	La Mirada	22	BGSENT	9/20/2022	WNV
Los Angeles	GRLA 2194	838	Cx. quinquefasciatus	South El Monte	50	GRVD	9/22/2022	WNV
Los Angeles	GRLA 2222	834	Cx. quinquefasciatus	Rowland Heights	45	GRVD	9/22/2022	WNV
Los Angeles	GRLA 2323	839	Cx. quinquefasciatus	Los Angeles	41	GRVD	9/23/2022	WNV
Los Angeles	GRLA 2346	821	Cx. quinquefasciatus	Montebello	30	GRVD	9/20/2022	WNV
Los Angeles	GRLA 2383	830	Cx. quinquefasciatus	Whittier	50	GRVD	9/22/2022	WNV
Los Angeles	GRLA 2478	5917	Cx. quinquefasciatus	Sunland	30	GRVD	9/23/2022	WNV
Los Angeles	GRLA 2580	5893	Cx. quinquefasciatus	Sherman Oaks	41	BGSENT	9/21/2022	WNV
Los Angeles	GRLA 2651	5895	Cx. quinquefasciatus	Encino	50	GRVD	9/21/2022	WNV
Los Angeles	GRLA 2953	814	Cx. quinquefasciatus	Santa Fe Springs	29	GRVD	9/20/2022	WNV
Los Angeles	GRLA 3042	836	Cx. quinquefasciatus	Hacienda Heights	44	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3044	837	Cx. quinquefasciatus	South El Monte	20	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3045	831	Cx. quinquefasciatus	Whittier	50	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3048	819	Cx. quinquefasciatus	Pico Rivera	49	GRVD	9/20/2022	WNV
Los Angeles	GRLA 3053	832	Cx. quinquefasciatus	Hacienda Heights	50	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3070	840	Cx. quinquefasciatus	Commerce	50	GRVD	9/23/2022	WNV
Los Angeles	GRLA 3073	845	Cx. quinquefasciatus	Lincoln Heights	50	GRVD	9/23/2022	WNV
Los Angeles	GRLA 3084	841	Cx. quinquefasciatus	Commerce	50	GRVD	9/23/2022	WNV
Los Angeles	GRLA 3086	5906	Cx. quinquefasciatus	Highland Park	50	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3088	5918	Cx. quinquefasciatus	Pacoima	50	GRVD	9/23/2022	WNV
Los Angeles	GRLA 3089	5909	Cx. quinquefasciatus	Glendale	49	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3132	5908	Cx. quinquefasciatus	Eagle Rock	30	GRVD	9/22/2022	WNV
Los Angeles	GRLA 3133	5912	Cx. quinquefasciatus	San Fernando	37	GRVD	9/23/2022	WNV
Los Angeles	SGVA 450	1055	Cx. quinquefasciatus	La Puente	50	GRVD	9/27/2022	WNV
Los Angeles	SGVA 477	1054	Cx. quinquefasciatus	West Covina	50	GRVD	9/27/2022	WNV
Los Angeles	SGVA 7	1063	Cx. quinquefasciatus	Claremont	23	GRVD	9/27/2022	WNV
Los Angeles	SGVA 887	1067	Cx. quinquefasciatus	Alhambra	19	GRVD	9/28/2022	WNV
Los Angeles	SGVA 953	1050	Cx. quinquefasciatus	Covina	42	GRVD	9/27/2022	WNV
Los Angeles	SGVA 996	1057	Cx. quinquefasciatus	South Pasadena	50	BGSENT	9/27/2022	WNV
Madera	MADR 3334	749	Cx. quinquefasciatus	Madera	50	CO2	9/22/2022	SLEV
Madera	MADR 3334	750	Cx. tarsalis	Madera	34	CO2	9/22/2022	SLEV
Madera	MADR 3334	754	Cx. quinquefasciatus	Madera	50	CO2	9/22/2022	SLEV
Madera	MADR 3334	755	Cx. tarsalis	Madera	29	CO2	9/22/2022	SLEV
Madera	MADR 697	732	Cx. tarsalis	Firebaugh	50	CO2	9/20/2022	WNV
Madera	MADR 697	732	Cx. tarsalis	Firebaugh	50	CO2	9/20/2022	SLEV
Madera	MADR 704	762	Cx. tarsalis	Madera	15	CO2	9/23/2022	SLEV
Riverside	COAV 25	5486	Cx. tarsalis	Mecca	50	CO2	9/27/2022	WNV
Riverside	COAV 68	5463	Cx. tarsalis	Mecca	50	CO2	9/27/2022	SLEV
Riverside	NWST 159	234	Cx. quinquefasciatus	Riverside	32	BGSENT	9/15/2022	WNV
Riverside	NWST 159	236	Cx. quinquefasciatus	Riverside	13	GRVD	9/20/2022	WNV
Riverside	NWST 310	131	Cx. quinquefasciatus	Riverside	22	GRVD	7/14/2022	WNV
Sacramento	SAYO 271003	4886	Cx. tarsalis	Isleton	50	CO2	9/23/2022	WNV
Sacramento	SAYO 271003	4888	Cx. tarsalis	Isleton	50	CO2	9/23/2022	WNV
San Bernardino	SANB 37	551	Cx. tarsalis	San Bernardino	7	CO2	9/23/2022	WNV
San Bernardino	WVAL 5496	1575	Cx. quinquefasciatus	Rancho Cucamonga	51	BGSENT	9/29/2022	WNV
San Bernardino	WVAL 9005	1558	Cx. quinquefasciatus	Upland	13	GRVD	9/29/2022	WNV
San Bernardino	WVAL 9007	1556	Cx. quinquefasciatus	Upland	23	GRVD	9/29/2022	WNV
San Joaquin	SJCM 8018	2104	Cx. tarsalis	Stockton	36	CO2	9/29/2022	WNV
San Joaquin	SJCM 8032	2107	Cx. tarsalis	Escalon	11	CO2	9/29/2022	WNV
San Joaquin	SJCM 8205	2112	Cx. pipiens	Farmington	24	CO2	9/29/2022	WNV
San Joaquin	SJCM 8206	2092	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2093	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2094	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2095	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2096	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2097	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2098	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV

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San Joaquin	SJCM 8206	2099	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2100	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2101	Cx. tarsalis	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2102	Cx. pipiens	Lodi	100	CO2	9/28/2022	WNV
San Joaquin	SJCM 8206	2103	Cx. pipiens	Lodi	63	CO2	9/28/2022	WNV
San Joaquin	SJCM 8208	2117	Cx. tarsalis	Lodi	50	CO2	9/29/2022	WNV
San Joaquin	SJCM 8208	2118	Cx. tarsalis	Lodi	8	CO2	9/29/2022	WNV
San Joaquin	SJCM 8209	2114	Cx. pipiens	Lodi	52	CO2	9/29/2022	WNV
San Joaquin	SJCM 8228	2086	Cx. tarsalis	Escalon	8	CO2	9/27/2022	WNV
San Joaquin	SJCM 8253	2121	Cx. pipiens	Linden	13	CO2	9/29/2022	WNV
Shasta	SHAS 116	548	Cx. pipiens	Anderson	50	GRVD	9/26/2022	WNV
Stanislaus	TRLK 1303	892	Cx. pipiens	Patterson	50	CO2	9/27/2022	WNV
Stanislaus	TRLK 1673	908	Cx. pipiens	Patterson	50	CO2	9/27/2022	WNV
Stanislaus	TRLK 17274	918	Cx. tarsalis	Newman	50	CO2	9/27/2022	WNV
Stanislaus	TRLK 322	957	Cx. tarsalis	Vernalis	50	CO2	9/27/2022	WNV
Stanislaus	TRLK 9732	920	Cx. tarsalis	Newman	18	CO2	9/27/2022	WNV
Tulare	DLTA 741334	3739	Cx. quinquefasciatus	Monson	50	CO2	9/21/2022	WNV
Tulare	DLTA 841631	3783	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3785	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3786	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3787	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3789	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3791	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3792	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3793	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3795	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3796	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3797	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3798	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3799	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3800	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3801	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3802	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3803	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3804	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3807	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	SLEV
Tulare	DLTA 841631	3808	Cx. quinquefasciatus	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3809	Cx. tarsalis	Visalia	50	CO2	9/22/2022	WNV
Tulare	DLTA 841631	3810	Cx. tarsalis	Visalia	15	CO2	9/22/2022	WNV
Tulare	DLTA 8422	3642	Cx. quinquefasciatus	Goshen	50	BGSENT	9/20/2022	WNV
Tulare	DLTA 8422	3761	Cx. quinquefasciatus	Goshen	50	BGSENT	9/21/2022	WNV
Tulare	DLTA 8422	3763	Cx. quinquefasciatus	Goshen	50	BGSENT	9/21/2022	WNV
Tulare	DLTA 8422	3765	Cx. quinquefasciatus	Goshen	50	BGSENT	9/21/2022	WNV
Tulare	DLTA 8422	3767	Cx. quinquefasciatus	Goshen	50	BGSENT	9/21/2022	WNV
Tulare	DLTA 84233	3816	Cx. quinquefasciatus	Visalia	42	BGSENT	9/22/2022	WNV
Tulare	DLTA 8528	3846	Cx. quinquefasciatus	Visalia	10	BGSENT	9/23/2022	WNV

Sentinel Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02
Butte	BUCO 000004	Gridley	9/20/2022	WNV	1623	
Los Angeles	LONG 000003	Long Beach	9/19/2022	WNV	1124	
Tehama	TEHA 000001	Red Bluff	9/20/2022	WNV	1483	1487

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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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