

California Arbovirus Surveillance Bulletin #22

Week 35 Friday, August 30, 2019



Weekly Update

Humans

West Nile Virus

A total of 12 human cases of West Nile virus (WNV) illness were reported this week from 8 counties: Butte (1), Fresno (1), Kern (2), Los Angeles (2), Riverside (2), San Bernardino (1), San Diego (1), and Tulare (2). **These are the first WNV human cases reported from Riverside County this year.** In 2019, 57 WNV human cases have been reported from 12 counties. Of the 57 reported cases, 34 (60%) were classified as neuroinvasive disease and 2 (3.5%) fatalities have been reported. The median age of the individuals is 58 years (range: 15–93 years) and 35 (61%) are male. Dates of symptom onset range from May 12 to August 17. In addition to the 57 cases, 14 asymptomatic infections have also been reported from Butte (1), El Dorado (1), Kern (3), Madera (1), San Bernardino (4), San Joaquin (1), Shasta (1), Stanislaus (1), and Sutter (1) counties. At this time last year, 42 human cases of WNV illness had been reported from 18 counties.

St. Louis encephalitis virus

Three human cases of St. Louis encephalitis virus (SLEV) disease have been reported from two counties: Fresno (1) and Imperial (2). These are the first SLEV cases reported in California this year. Of the 3 reported cases, 3 (100%) were classified as neuroinvasive disease. The median age of the individuals is 49 years and dates of symptom onset range from July 14 to July 27. No fatalities have been reported.

Dead Birds

A total of 10 WNV positive dead birds were reported this week from 5 counties: Fresno (1), Los Angeles (2), Sacramento (5), Tulare (1), and Yuba (1). In 2019, a total of 91 WNV positive dead birds have been reported from 13 counties. At this time last year, 397 WNV positive dead birds had been reported from 18 counties.

Mosquito Pools

West Nile virus

A total of 247 WNV positive mosquito pools were reported this week from 18 counties: Butte (6), Fresno (37), Kern (12), Lake (2), Los Angeles (4), Madera (7), Merced (4), Orange (15), Placer (4), Riverside (8), Sacramento (11), San Joaquin (41), Solano (1), Stanislaus (37), Sutter (2), Tulare (33), Yolo (21), and Yuba (2). **This is the first WNV positive mosquito pool reported from Solano County this year.** In 2019, a total of 2,516 WNV positive mosquito pools have been reported from 24 counties. At this time last year, 1,456 WNV positive mosquito pools had been reported from 27 counties.

St. Louis encephalitis virus

A total of 24 SLEV positive mosquito pools were reported this week from 4 counties: Fresno (5), Kern (1), Riverside (14), and Tulare (4). In 2019, a total of 178 SLEV positive mosquito pools have been reported from 7 counties: Fresno (36), Imperial (3), Kern (48), Kings (1), Riverside (34), Stanislaus (1), and Tulare (55). At this time last year, 264 SLEV positive mosquito pools had been reported from 8 counties.

Sentinel Chickens

A total of 8 WNV seroconversions were reported this week from 4 counties: Los Angeles (2), Merced (1), Placer (2), and Tulare (3). In 2019, 53 WNV positive chickens have been reported from 8 counties. At this time last year, 84 WNV positive chickens had been reported from 12 counties.

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YTD WNV Activity by Element and County, 2019					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Butte	3			36	12
Fresno	27	1	10	416	
Glenn				1	1
Imperial	3			1	
Kern	3	2	1	118	
Kings				45	
Lake				6	
Los Angeles	4		11	28	9
Madera		1		57	
Merced			2	27	10
Orange			12	19	
Placer			2	47	6
Riverside	2			499	
Sacramento			26	48	
San Bernardino	2	1		40	
San Diego	3		1		
San Joaquin	2		5	180	
Shasta				3	
Solano	1			1	
Stanislaus	1	1	1	155	
Sutter				14	4
Tulare	6		16	717	10
Tuolumne			1		
Ventura				1	
Yolo				36	
Yuba			3	21	1
Totals	57	6	91	2,516	53

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2018 & 2019 YTD West Nile Virus Comparisons		
	2018	2019
Total # Dead Bird Reports	6,055	4,034
# Positive Counties	36	26
# Human Cases	42	57
# Positive Dead Birds / # Tested	397 / 1,603	91 / 1,231
# Positive Mosquito Pools / # Tested	1,456 / 30,672	2,516 / 31,301
# Seroconversions / # Tested	84 / 6,909	53 / 6,011

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	12	3	0
	YTD	57	3	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	33	10
	YTD	1,231	91

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	332	8	0	0
	YTD	6,011	53	0	0

Mosquitoes

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Mosquito Pools	Week	247 / 1,818	24 / 1,697	0 / 1,534	0 / 0	0 / 0	0 / 0
	YTD	2,516 / 31,301	178 / 28,490	0 / 26,641	0 / 541	0 / 541	0 / 541

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POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Fresno	Fresno MVCD	Fresno	93711	California Scrub-Jay	8/22/2019	WNV
Los Angeles	Greater Los Angeles Co VCD - Sylmar	West Hills	91307	American Crow	8/20/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Beverly Hills	90212	American Crow	8/22/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	8/27/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Fair Oaks	95628	California Scrub-Jay	8/21/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Yellow-billed Magpie	8/23/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95826	California Scrub-Jay	8/26/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	8/23/2019	WNV
Tulare	Tulare MAD	Tulare	93274	Sparrow	8/23/2019	WNV
Yuba	Sutter-Yuba MVCD	Marysville	95901	American Crow	8/27/2019	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO11	345	Cx. tarsalis	Durham	50	CO2	8/26/19	WNV
Butte	BUCO118	341	Cx. tarsalis	Durham	50	CO2	8/26/19	WNV
Butte	BUCO36	348	Cx. tarsalis	Gridley	50	CO2	8/27/19	WNV
Butte	BUCO55	338	Cx. tarsalis	Palermo	50	CO2	8/21/19	WNV
Butte	BUCO55	339	Cx. tarsalis	Palermo	50	CO2	8/21/19	WNV
Butte	BUCO7	347	Cx. tarsalis	Chico	50	CO2	8/27/19	WNV
Fresno	CNSL1054	605	Cx. quinquefasciatus	Fresno	42	GRVD	8/22/19	WNV
Fresno	CNSL1399	615	Cx. tarsalis	Clovis	21	BGSENT	8/22/19	WNV
Fresno	CNSL1452	610	Cx. quinquefasciatus	Fresno	27	GRVD	8/22/19	WNV
Fresno	CNSL1523	604	Cx. quinquefasciatus	Fresno	31	GRVD	8/22/19	WNV
Fresno	CNSL1658	620	Cx. quinquefasciatus	Clovis	12	GRVD	8/22/19	WNV
Fresno	CNSL1792	607	Cx. quinquefasciatus	Fresno	19	GRVD	8/22/19	WNV
Fresno	CNSL1856	638	Cx. quinquefasciatus	Fresno	35	GRVD	8/23/19	WNV
Fresno	CNSL1859	623	Cx. quinquefasciatus	Fresno	24	GRVD	8/22/19	WNV
Fresno	CNSL1937	636	Cx. quinquefasciatus	Fresno	50	GRVD	8/23/19	SLEV
Fresno	CNSL1973	637	Cx. quinquefasciatus	Fresno	27	GRVD	8/23/19	SLEV
Fresno	CNSL2281	588	Cx. quinquefasciatus	Sanger	36	GRVD	8/20/19	WNV
Fresno	CNSL2463	587	Cx. quinquefasciatus	Sanger	31	GRVD	8/20/19	WNV
Fresno	CNSL2505	589	Cx. quinquefasciatus	Sanger	50	GRVD	8/20/19	SLEV
Fresno	CNSL4041	582	Cx. quinquefasciatus	Selma	13	GRVD	8/20/19	WNV
Fresno	CNSL4167	581	Cx. quinquefasciatus	Selma	41	GRVD	8/20/19	WNV
Fresno	CNSL5167	578	Cx. quinquefasciatus	Kingsburg	13	GRVD	8/20/19	WNV
Fresno	CNSL6075	580	Cx. quinquefasciatus	Caruthers	43	GRVD	8/20/19	WNV
Fresno	CNSL8035	596	Cx. quinquefasciatus	Clovis	44	GRVD	8/21/19	WNV
Fresno	CNSL8061	634	Cx. quinquefasciatus	Fresno	22	GRVD	8/23/19	WNV
Fresno	CNSL8073	608	Cx. quinquefasciatus	Fresno	50	GRVD	8/22/19	WNV
Fresno	CNSL8107	622	Cx. quinquefasciatus	Fresno	28	GRVD	8/22/19	WNV
Fresno	CNSL8120	600	Cx. quinquefasciatus	Fresno	29	GRVD	8/21/19	WNV
Fresno	CNSL8126	630	Cx. quinquefasciatus	Fresno	50	GRVD	8/23/19	SLEV
Fresno	CNSL8126	630	Cx. quinquefasciatus	Fresno	50	GRVD	8/23/19	WNV
Fresno	CNSL8127	633	Cx. quinquefasciatus	Fresno	44	GRVD	8/23/19	WNV
Fresno	CNSL9102	627	Cx. quinquefasciatus	Clovis	17	GRVD	8/23/19	WNV

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Fresno	FRNO10	525	Cx. quinquefasciatus	Fresno	50	GRVD	8/29/19	WNV
Fresno	FRNO10	526	Cx. quinquefasciatus	Fresno	50	GRVD	8/29/19	WNV
Fresno	FRNO112	504	Cx. quinquefasciatus	Fresno	50	GRVD	8/27/19	WNV
Fresno	FRNO112	515	Cx. quinquefasciatus	Fresno	21	BGSENT	8/27/19	WNV
Fresno	FRNO116	519	Cx. quinquefasciatus	Fresno	50	GRVD	8/27/19	WNV
Fresno	FRNO2	514	Cx. quinquefasciatus	Kerman	24	BGSENT	8/27/19	WNV
Fresno	FRNO219	521	Cx. quinquefasciatus	Fresno	50	GRVD	8/27/19	SLEV
Fresno	FRNO219	521	Cx. quinquefasciatus	Fresno	50	GRVD	8/27/19	WNV
Fresno	FRNO219	522	Cx. quinquefasciatus	Fresno	34	GRVD	8/27/19	WNV
Fresno	FRNO27	509	Cx. quinquefasciatus	Fresno	21	GRVD	8/27/19	WNV
Fresno	FRNO8006	505	Cx. quinquefasciatus	Kerman	50	GRVD	8/27/19	WNV
Fresno	FRNO8006	506	Cx. quinquefasciatus	Kerman	50	GRVD	8/27/19	WNV
Fresno	FRNO8006	507	Cx. quinquefasciatus	Kerman	44	GRVD	8/27/19	WNV
Fresno	FRWS100006	239	Cx. tarsalis	Firebaugh	50	CO2	8/27/19	WNV
Fresno	FRWS300011	241	Cx. quinquefasciatus	Firebaugh	24	OTHER	8/27/19	WNV
Fresno	FRWS400017	245	Cx. tarsalis	Kerman	21	CO2	8/27/19	WNV
Kern	DLNO124	211	Cx. quinquefasciatus	Delano	50	CO2	8/22/19	WNV
Kern	DLNO33	210	Cx. quinquefasciatus	Delano-McFarland	50	CO2	8/22/19	WNV
Kern	DLNO66	215	Cx. quinquefasciatus	Delano	28	GRVD	8/27/19	WNV
Kern	DLNO67	219	Cx. quinquefasciatus	Delano	25	GRVD	8/27/19	WNV
Kern	DLNO86	216	Cx. quinquefasciatus	Delano	35	GRVD	8/27/19	WNV
Kern	DLNO97	209	Cx. quinquefasciatus	Delano-McFarland	50	CO2	8/22/19	WNV
Kern	KERN1102	523	Cx. quinquefasciatus	Wasco	50	CO2	8/22/19	WNV
Kern	KERN3030	520	Cx. tarsalis	Shafter	50	CO2	8/21/19	WNV
Kern	KERN31	519	Cx. tarsalis	Arvin-Lamont	21	CO2	8/20/19	WNV
Kern	KERN47	521	Cx. quinquefasciatus	Buttonwillow	21	GRVD	8/21/19	WNV
Kern	WEST6230	150	Cx. tarsalis		50	CO2	8/28/19	SLEV
Kern	WEST6230	150	Cx. tarsalis		50	CO2	8/28/19	WNV
Kern	WEST6254	148	Cx. quinquefasciatus	Ford City	27	GRVD	8/28/19	WNV
Lake	LAKE1130	584	Cx. tarsalis	Lower Lake	15	CO2	8/27/19	WNV
Lake	LAKE302	576	Cx. tarsalis	Clearlake Oaks	50	CO2	8/23/19	WNV
Los Angeles	ANTV845126	108	Cx. quinquefasciatus	Lancaster	6	BGSENT	8/28/19	WNV
Los Angeles	GRLA2021	5743	Cx. quinquefasciatus	Los Angeles	18	GRVD	8/21/19	WNV
Los Angeles	GRLA2889	813	Cx. quinquefasciatus	Lakewood	50	GRVD	8/22/19	WNV
Los Angeles	LACW1080	614	Cx. quinquefasciatus	Los Angeles	17	CO2	8/21/19	WNV
Madera	MADR1109	232	Cx. tarsalis	Madera	32	CO2	8/22/19	WNV
Madera	MADR178	228	Cx. quinquefasciatus	Madera	50	CO2	8/22/19	WNV
Madera	MADR195	237	Cx. tarsalis	Chowchilla	50	CO2	8/23/19	WNV
Madera	MADR208	226	Cx. tarsalis	Madera	50	CO2	8/21/19	WNV
Madera	MADR300	223	Cx. quinquefasciatus	Chowchilla	36	CO2	8/21/19	WNV
Madera	MADR3334	230	Cx. quinquefasciatus	Parkwood	50	CO2	8/22/19	WNV
Madera	MADR3334	231	Cx. tarsalis	Parkwood	36	CO2	8/22/19	WNV
Merced	MERC1037	541	Cx. tarsalis	Merced	7	CO2	8/23/19	WNV
Merced	MERC1225	532	Cx. tarsalis	Atwater	21	CO2	8/23/19	WNV
Merced	MERC201523	557	Cx. pipiens	McSwain	46	CO2	8/28/19	WNV
Merced	TRLK19292	860	Cx. pipiens	Hilmar-Irwin	50	CO2	8/23/19	WNV
Orange	ORCO1005	3080	Cx. quinquefasciatus	Buena Park	46	GRVD	8/20/19	WNV
Orange	ORCO1008	3090	Cx. quinquefasciatus	Fullerton	16	GRVD	8/21/19	WNV
Orange	ORCO1015	3014	Cx. quinquefasciatus	Orange	21	GRVD	8/20/19	WNV
Orange	ORCO1015	3018	Cx. quinquefasciatus	Orange	28	GRVD	8/20/19	WNV
Orange	ORCO1015	3088	Cx. quinquefasciatus	Orange	3	BGSENT	8/20/19	WNV
Orange	ORCO1029	3191	Cx. quinquefasciatus	Lake Forest	3	CO2	8/22/19	WNV
Orange	ORCO1040	3061	Cx. quinquefasciatus	Orange	8	GRVD	8/20/19	WNV
Orange	ORCO235	3019	Cx. quinquefasciatus	Stanton	10	GRVD	8/20/19	WNV

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Orange	ORCO277	2988	Cx. quinquefasciatus	Fullerton	19	CO2	8/15/19	WNV
Orange	ORCO29	3157	Cx. quinquefasciatus	Santa Ana	36	CO2	8/22/19	WNV
Orange	ORCO29	3175	Cx. quinquefasciatus	Santa Ana	36	GRVD	8/22/19	WNV
Orange	ORCO300	3145	Cx. quinquefasciatus	Seal Beach	42	GRVD	8/21/19	WNV
Orange	ORCO302	3052	Cx. quinquefasciatus	Anaheim	26	GRVD	8/20/19	WNV
Orange	ORCO317	3120	Cx. quinquefasciatus	Fullerton	50	GRVD	8/21/19	WNV
Orange	ORCO323	3136	Cx. quinquefasciatus	Buena Park	50	GRVD	8/21/19	WNV
Placer	PLCR198707	1833	Cx. tarsalis	Lincoln	50	CO2	8/27/19	WNV
Placer	PLCR25	1786	Cx. tarsalis	Lincoln	50	CO2	8/27/19	WNV
Placer	PLCR25	1787	Cx. tarsalis	Lincoln	43	CO2	8/27/19	WNV
Placer	PLCR668	1781	Cx. tarsalis	Lincoln	49	CO2	8/27/19	WNV
Riverside	COAV0	4797	Cx. quinquefasciatus	Palm Desert	6	BGSENT	8/28/19	WNV
Riverside	COAV10	4775	Cx. tarsalis	Oasis	50	CO2	8/27/19	SLEV
Riverside	COAV10	4777	Cx. tarsalis	Oasis	50	CO2	8/27/19	WNV
Riverside	COAV10	4778	Cx. tarsalis	Oasis	50	CO2	8/27/19	SLEV
Riverside	COAV130	4735	Cx. tarsalis		50	CO2	8/27/19	SLEV
Riverside	COAV131	4780	Cx. tarsalis	Oasis	50	CO2	8/27/19	SLEV
Riverside	COAV131	4782	Cx. tarsalis	Oasis	50	CO2	8/27/19	SLEV
Riverside	COAV132	4730	Cx. tarsalis		50	CO2	8/27/19	SLEV
Riverside	COAV132	4731	Cx. tarsalis		50	CO2	8/27/19	SLEV
Riverside	COAV17	4765	Cx. tarsalis		50	CO2	8/27/19	WNV
Riverside	COAV17	4767	Cx. tarsalis		43	CO2	8/27/19	SLEV
Riverside	COAV17	4767	Cx. tarsalis		43	CO2	8/27/19	WNV
Riverside	COAV322	4795	Cx. quinquefasciatus	Cathedral City	6	GRVD	8/28/19	WNV
Riverside	COAV45	4827	Cx. tarsalis		50	CO2	8/29/19	WNV
Riverside	COAV45	4828	Cx. tarsalis		50	CO2	8/29/19	SLEV
Riverside	COAV45	4828	Cx. tarsalis		50	CO2	8/29/19	WNV
Riverside	COAV5	4728	Cx. tarsalis		50	CO2	8/27/19	SLEV
Riverside	COAV540	4763	Cx. tarsalis		50	CO2	8/27/19	WNV
Riverside	COAV540	4764	Cx. tarsalis		30	CO2	8/27/19	SLEV
Riverside	COAV6	4768	Cx. tarsalis		37	CO2	8/27/19	SLEV
Riverside	COAV610	4724	Cx. tarsalis		50	CO2	8/27/19	SLEV
Riverside	COAV8	4726	Cx. tarsalis	Oasis	50	CO2	8/27/19	SLEV
Sacramento	SAYO201006	4973	Cx. tarsalis	Sacramento	50	CO2	8/27/19	WNV
Sacramento	SAYO204020	4817	Cx. pipiens	Foothill Farms	11	CO2	8/23/19	WNV
Sacramento	SAYO222064	5035	Cx. pipiens	Sacramento	30	GRVD	8/27/19	WNV
Sacramento	SAYO232012	4938	Cx. tarsalis	Elk Grove	9	CO2	8/27/19	WNV
Sacramento	SAYO233068	4686	Cx. pipiens	Elk Grove	15	GRVD	8/21/19	WNV
Sacramento	SAYO233068	4959	Cx. pipiens	Elk Grove	25	CO2	8/27/19	WNV
Sacramento	SAYO245010	4778	Cx. pipiens	Wilton	12	GRVD	8/23/19	WNV
Sacramento	SAYO254011	4767	Cx. pipiens	Galt	42	CO2	8/23/19	WNV
Sacramento	SAYO254029	4772	Cx. pipiens	Herald	50	BGSENT	8/23/19	WNV
Sacramento	SAYO254029	4773	Cx. pipiens	Herald	50	BGSENT	8/23/19	WNV
Sacramento	SAYO254029	4774	Cx. pipiens	Herald	50	BGSENT	8/23/19	WNV
San Joaquin	SJCM8010	1813	Cx. tarsalis	Ripon	40	CO2	8/27/19	WNV
San Joaquin	SJCM8011	1812	Cx. pipiens	Ripon	9	CO2	8/27/19	WNV
San Joaquin	SJCM8018	1801	Cx. tarsalis	Stockton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8018	1802	Cx. tarsalis	Stockton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8018	1803	Cx. tarsalis	Stockton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8018	1804	Cx. tarsalis	Stockton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8018	1805	Cx. tarsalis	Stockton	11	CO2	8/27/19	WNV
San Joaquin	SJCM8018	1806	Cx. pipiens	Stockton	16	CO2	8/27/19	WNV
San Joaquin	SJCM8029	1852	Cx. tarsalis	Escalon	5	CO2	8/29/19	WNV
San Joaquin	SJCM8029	1853	Cx. pipiens	Escalon	45	CO2	8/29/19	WNV

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San Joaquin	SJCM8041	1750	Cx. pipiens	Lodi	50	CO2	8/27/19	WNV
San Joaquin	SJCM8070	1828	Cx. tarsalis	Lodi	5	CO2	8/29/19	WNV
San Joaquin	SJCM8070	1829	Cx. pipiens	Lodi	11	CO2	8/29/19	WNV
San Joaquin	SJCM8094	1769	Cx. tarsalis	Tracy	22	CO2	8/27/19	WNV
San Joaquin	SJCM8094	1770	Cx. pipiens	Tracy	6	CO2	8/27/19	WNV
San Joaquin	SJCM8100	1710	Cx. tarsalis	Tracy	50	CO2	8/27/19	WNV
San Joaquin	SJCM8100	1711	Cx. tarsalis	Tracy	24	CO2	8/27/19	WNV
San Joaquin	SJCM8100	1712	Cx. pipiens	Tracy	38	CO2	8/27/19	WNV
San Joaquin	SJCM8106	1856	Cx. pipiens	Escalon	36	CO2	8/29/19	WNV
San Joaquin	SJCM8185	1809	Cx. tarsalis	Manteca	6	CO2	8/27/19	WNV
San Joaquin	SJCM8203	1755	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8203	1756	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8203	1758	Cx. tarsalis	Thornton	40	CO2	8/27/19	WNV
San Joaquin	SJCM8205	1835	Cx. tarsalis	Farmington	7	CO2	8/29/19	WNV
San Joaquin	SJCM8205	1836	Cx. pipiens	Farmington	24	CO2	8/29/19	WNV
San Joaquin	SJCM8206	1780	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1781	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1782	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1783	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1784	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1785	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1786	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1787	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1788	Cx. tarsalis	Thornton	53	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1789	Cx. pipiens	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8206	1790	Cx. pipiens	Thornton	54	CO2	8/27/19	WNV
San Joaquin	SJCM8208	1846	Cx. tarsalis	Lockeford	50	CO2	8/29/19	WNV
San Joaquin	SJCM8208	1847	Cx. tarsalis	Lockeford	48	CO2	8/29/19	WNV
San Joaquin	SJCM8208	1848	Cx. pipiens	Lockeford	22	CO2	8/29/19	WNV
San Joaquin	SJCM8230	1771	Cx. tarsalis	Thornton	50	CO2	8/27/19	WNV
San Joaquin	SJCM8230	1772	Cx. tarsalis	Thornton	23	CO2	8/27/19	WNV
Solano	SOLA1	608	Cx. tarsalis	Dixon	50	CO2	8/27/19	WNV
Stanislaus	TRLK1202	884	Cx. pipiens	Hughson	50	CO2	8/27/19	WNV
Stanislaus	TRLK1225	899	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK1308	908	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK1308	909	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK1309	882	Cx. pipiens	Hughson	28	CO2	8/27/19	WNV
Stanislaus	TRLK1450	866	Cx. pipiens	Turlock	50	CO2	8/23/19	WNV
Stanislaus	TRLK1450	867	Cx. tarsalis	Turlock	48	CO2	8/23/2019	WNV
Stanislaus	TRLK1612	903	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK1612	905	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK1612	906	Cx. tarsalis	Turlock	47	CO2	8/27/19	WNV
Stanislaus	TRLK17152	890	Cx. pipiens	Denair	50	CO2	8/27/19	WNV
Stanislaus	TRLK17152	892	Cx. pipiens	Denair	50	CO2	8/27/19	WNV
Stanislaus	TRLK18102	920	Cx. tarsalis	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18102	922	Cx. tarsalis	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18102	923	Cx. tarsalis	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18102	924	Cx. tarsalis	Turlock	47	CO2	8/27/19	WNV
Stanislaus	TRLK18102	925	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18102	926	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18102	928	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18135	916	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK18135	917	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK1904	898	Cx. pipiens	Turlock	17	CO2	8/27/19	WNV

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Stanislaus	TRLK1906	877	Cx. pipiens	Hughson	50	CO2	8/27/19	WNV
Stanislaus	TRLK1906	879	Cx. pipiens	Hughson	50	CO2	8/27/19	WNV
Stanislaus	TRLK19291	856	Cx. pipiens	Turlock	50	CO2	8/23/19	WNV
Stanislaus	TRLK432	929	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	930	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	932	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	933	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	934	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	935	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	936	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	937	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	938	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	939	Cx. pipiens	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	941	Cx. tarsalis	Turlock	50	CO2	8/27/19	WNV
Stanislaus	TRLK432	942	Cx. tarsalis	Turlock	50	CO2	8/27/19	WNV
Sutter	SUYA31	411	Cx. tarsalis	Rio Oso	41	REST	8/26/19	WNV
Sutter	SUYA68	409	Cx. tarsalis		10	REST	8/26/19	WNV
Tulare	DLTA6236	3018	Cx. quinquefasciatus	Dinuba	30	CO2	8/28/19	WNV
Tulare	DLTA6236	3019	Cx. tarsalis	Dinuba	29	CO2	8/28/19	WNV
Tulare	DLTA6407	3027	Cx. quinquefasciatus	Dinuba	17	GRVD	8/28/19	WNV
Tulare	DLTA6408	3043	Cx. quinquefasciatus	Dinuba	47	GRVD	8/28/19	WNV
Tulare	DLTA6416	2988	Cx. quinquefasciatus	Dinuba	43	GRVD	8/27/19	WNV
Tulare	DLTA6417	3028	Cx. quinquefasciatus	Dinuba	11	GRVD	8/28/19	WNV
Tulare	DLTA6417	3085	Cx. quinquefasciatus	Dinuba	20	GRVD	8/29/19	WNV
Tulare	DLTA6517	2984	Cx. quinquefasciatus	Orosi-Cutler	33	GRVD	8/27/19	WNV
Tulare	DLTA6520	3032	Cx. quinquefasciatus	Orosi-Cutler	16	GRVD	8/28/19	WNV
Tulare	DLTA7316	3029	Cx. quinquefasciatus	Traver	12	GRVD	8/28/19	WNV
Tulare	DLTA7625	3002	Cx. quinquefasciatus	Woodlake	14	GRVD	8/27/19	WNV
Tulare	DLTA8413	3037	Cx. quinquefasciatus	Visalia	50	GRVD	8/28/19	WNV
Tulare	DLTA8415	3063	Cx. quinquefasciatus	Visalia	50	CO2	8/29/19	WNV
Tulare	DLTA8415	3067	Cx. quinquefasciatus	Visalia	50	CO2	8/29/19	SLEV
Tulare	DLTA8415	3067	Cx. quinquefasciatus	Visalia	50	CO2	8/29/19	WNV
Tulare	DLTA8415	3071	Cx. quinquefasciatus	Visalia	50	CO2	8/29/19	WNV
Tulare	DLTA8415	3074	Cx. quinquefasciatus	Visalia	48	CO2	8/29/19	SLEV
Tulare	DLTA8422	3014	Cx. quinquefasciatus	Visalia	50	BGSENT	8/27/19	WNV
Tulare	DLTA8422	3026	Cx. quinquefasciatus	Visalia	16	GRVD	8/28/19	WNV
Tulare	DLTA8424	3083	Cx. quinquefasciatus	Visalia	36	GRVD	8/29/19	WNV
Tulare	DLTA8427	3084	Cx. quinquefasciatus	Visalia	50	GRVD	8/29/19	WNV
Tulare	DLTA8436	3076	Cx. quinquefasciatus	Visalia	10	BGSENT	8/29/19	WNV
Tulare	DLTA8501	3049	Cx. quinquefasciatus	Ivanhoe	22	GRVD	8/28/19	WNV
Tulare	DLTA8519	3051	Cx. quinquefasciatus	Visalia	43	GRVD	8/28/19	WNV
Tulare	DLTA8527	2976	Cx. quinquefasciatus	Visalia	17	BGSENT	8/27/19	WNV
Tulare	DLTA8527	3098	Cx. quinquefasciatus	Visalia	11	GRVD	8/29/19	WNV
Tulare	DLTA8530	3042	Cx. quinquefasciatus	Visalia	17	GRVD	8/28/19	WNV
Tulare	DLTA8532	3099	Cx. quinquefasciatus	Visalia	43	GRVD	8/29/19	SLEV
Tulare	DLTA8533	3050	Cx. quinquefasciatus	Visalia	13	GRVD	8/28/19	WNV
Tulare	DLTA9402	3001	Cx. quinquefasciatus	Visalia	14	GRVD	8/27/19	WNV
Tulare	DLTA9604	3046	Cx. quinquefasciatus	Exeter	19	GRVD	8/28/19	WNV
Tulare	DLTA9606	3003	Cx. quinquefasciatus	Farmersville	33	GRVD	8/27/19	WNV
Tulare	TLRE192436	24	Cx. quinquefasciatus	Tulare	18	GRVD	8/27/19	WNV
Tulare	TLRE202401	19	Cx. quinquefasciatus	Tulare	25	GRVD	8/21/19	SLEV
Tulare	TLRE202401	19	Cx. quinquefasciatus	Tulare	25	GRVD	8/21/19	WNV
Tulare	TLRE202403	21	Cx. quinquefasciatus	Tulare	12	GRVD	8/21/19	WNV
Tulare	TLRE202413	23	Cx. quinquefasciatus	Tulare	50	GRVD	8/27/19	WNV

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Yolo	SAYO103007	5067	Cx. pipiens	Dunnigan	21	GRVD	8/27/19	WNV
Yolo	SAYO104006	5039	Cx. tarsalis	Knights Landing	50	CO2	8/27/19	WNV
Yolo	SAYO114001	5048	Cx. pipiens	Knights Landing	3	CO2	8/27/19	WNV
Yolo	SAYO114002	5057	Cx. tarsalis	Knights Landing	50	CO2	8/27/19	WNV
Yolo	SAYO115008	5026	Cx. tarsalis	Knights Landing	50	CO2	8/27/19	WNV
Yolo	SAYO115008	5028	Cx. tarsalis	Knights Landing	50	CO2	8/27/19	WNV
Yolo	SAYO115008	5029	Cx. tarsalis	Knights Landing	50	CO2	8/27/19	WNV
Yolo	SAYO116002	5052	Cx. pipiens	Knights Landing	1	GRVD	8/27/19	WNV
Yolo	SAYO125016	4701	Cx. pipiens	Woodland	7	GRVD	8/23/19	WNV
Yolo	SAYO135006	4748	Cx. pipiens	Woodland	4	GRVD	8/23/19	WNV
Yolo	SAYO135016	4725	Cx. tarsalis	Woodland	50	CO2	8/23/19	WNV
Yolo	SAYO135016	4727	Cx. tarsalis	Woodland	50	CO2	8/23/19	WNV
Yolo	SAYO136008	4717	Cx. tarsalis	Davis	50	CO2	8/23/19	WNV
Yolo	SAYO145005	4902	Cx. tarsalis	Davis	50	CO2	8/27/19	WNV
Yolo	SAYO145005	4904	Cx. tarsalis	Davis	50	CO2	8/27/19	WNV
Yolo	SAYO145013	4921	Cx. tarsalis	Davis	50	CO2	8/27/19	WNV
Yolo	SAYO146002	4898	Cx. tarsalis	Davis	50	CO2	8/27/19	WNV
Yolo	SAYO146006	4913	Cx. tarsalis	Davis	50	CO2	8/27/19	WNV
Yolo	SAYO146006	4917	Cx. tarsalis	Davis	50	CO2	8/27/19	WNV
Yolo	SAYO146020	4926	Cx. tarsalis	Davis	50	BGSENT	8/27/19	WNV
Yolo	SAYO277	5031	Cx. tarsalis	Knights Landing	50	BGSENT	8/27/19	WNV
Yuba	SUYA10	408	Cx. tarsalis	Olivehurst	10	REST	8/26/19	WNV
Yuba	SUYA37	418	Cx. tarsalis	Marysville	19	CO2	8/28/19	WNV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Los Angeles	LACW1010	Los Angeles	8/22/2019	WNV	1643	1645	
Merced	MERC501	El Nido	8/16/2019	WNV	1526		
Placer	PLCR757	Auburn	8/26/2019	WNV	4610	4611	
Tulare	TLRE202436	Tulare	8/23/2019	WNV	1775	1777	1778

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.

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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.

Prepared by the Vector-Borne Disease Section (Infectious Diseases Branch), California Department of Public Health, 850 Marina Bay Parkway, Richmond, CA 94804. Questions concerning this bulletin should be addressed to Tina Feiszli by phone (510) 412-6253 or email: tina.feiszli@cdph.ca.gov.

Website Information: For updated information on WNV in California, please visit the California WNV website, www.westnile.ca.gov, or the California Vectorborne Disease Surveillance System website, www.calsurv.org. For national information on WNV and other arboviruses, please visit the CDC websites: www.cdc.gov and https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html