

California Arbovirus Surveillance Bulletin #24

Week 37 Friday, September 13, 2019



Weekly Update

Humans

West Nile virus

A total of 27 human cases of West Nile virus (WNV) illness were reported this week from 10 counties: Butte (1), Fresno (10), Kern (7), Madera (1), Merced (1), Riverside (2), San Bernardino (1), San Joaquin (1), Stanislaus (2), and Tulare (1). **These are the first WNV cases reported from Madera and Merced counties this year.** In 2019, 89 WNV human cases have been reported from 15 counties. Of the 89 reported cases, 50 (56%) had neuroinvasive disease and 2 (2.2%) fatalities have been reported. The median age of the individuals is 57 years (range: 11–93 years) and 51 (57%) are male. Dates of symptom onset range from May 12 to August 31. In addition to the 89 cases, 15 asymptomatic infections have also been reported from Butte (1), El Dorado (1), Kern (3), Madera (1), Orange (1), San Bernardino (4), San Joaquin (1), Stanislaus (1), Sutter (1), and Tulare (1) counties. At this time last year, 79 human cases had been reported from 24 counties.

St. Louis encephalitis virus

One human case of St. Louis encephalitis virus (SLEV) disease was reported this week from Fresno County. In 2019, 4 SLEV human cases have been reported from 2 counties: Fresno (2) and Imperial (2). Of the 4 reported cases, 4 (100%) had neuroinvasive disease. The median age of the individuals is 62 years and dates of symptom onset range from July 14 to August 4. No fatalities have been reported.

Dead Birds

A total of 17 WNV positive dead birds were reported this week from 3 counties: Los Angeles (7), Orange (4), and Sacramento (6). In 2019, a total of 120 WNV positive dead birds have been reported from 16 counties. At this time last year, 422 WNV positive dead birds had been reported from 18 counties.

Mosquito Pools

West Nile virus

A total of 163 WNV positive mosquito pools were reported this week from 14 counties: Fresno (19), Imperial (1), Kern (4), Los Angeles (6), Madera (6), Merced (10), Orange (26), Riverside (9), Sacramento (17), San Joaquin (18), Solano (4), Stanislaus (18), Tulare (15), and Yolo (10). In 2019, a total of 2,978 WNV positive mosquito pools have been reported from 24 counties. At this time last year, 1,730 WNV positive mosquito pools had been reported from 28 counties.

St. Louis encephalitis virus

A total of 52 SLEV positive mosquito pools were reported this week from 9 counties: Fresno (7), Imperial (2), Kern (4), Los Angeles (1), Madera (1), Riverside (26), San Bernardino (1), Stanislaus (3), and Tulare (7). **This is the first detection of SLEV activity in Los Angeles, Madera, and San Bernardino counties this year.** In 2019, a total of 276 SLEV positive mosquito pools have been reported from 12 counties: Fresno (48), Imperial (5), Kern (54), Kings (2), Los Angeles (1), Madera (1), Merced (1), Orange (1), Riverside (82), San Bernardino (1), Stanislaus (6), and Tulare (74). At this time last year, 319 SLEV positive mosquito pools had been reported from 8 counties.

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Sentinel Chickens

West Nile virus

A total of 8 WNV seroconversions were reported this week from 3 counties: Los Angeles (2), Placer (2), and Solano (4). **These are the first WNV positive chickens reported from Solano County this year.** In 2019, 89 WNV positive chickens have been reported from 12 counties. At this time last year, 112 WNV positive chickens had been reported from 14 counties.

St. Louis encephalitis virus

A total of 2 SLEV seroconversions were reported this week from Merced County; these are the first SLEV positive chickens detected in California this year. At this time last year, 1 SLEV positive chicken had been reported from 1 county.

2018 & 2019 YTD West Nile Virus Comparisons		
	2018	2019
Total # Dead Bird Reports	6,525	4,335
# Positive Counties	37	29
# Human Cases	79	89
# Positive Dead Birds / # Tested	430 / 1,728	120 / 1,388
# Positive Mosquito Pools / # Tested	1,730 / 33,859	2,978 / 34,925
# Seroconversions / # Tested	112 / 7,562	89 / 6,761

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YTD WNV Activity by Element and County, 2019					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Butte	4			41	25
Colusa					4
Contral Costa			1		1
Fresno	37	1	10	470	
Glenn				1	1
Imperial	3			2	
Kern	10	2	2	126	
Kings				58	
Lake				12	
Los Angeles	5		18	39	11
Madera	1	2		69	
Merced	1	1	2	45	14
Orange	1		17	111	
Placer			2	50	8
Riverside	4			515	
Sacramento			36	70	
San Bernardino	3	1	3	46	
San Diego	3		1		
San Joaquin	3		5	256	
Shasta				3	
Solano	1			5	4
Stanislaus	5	2	1	181	
Sutter				15	7
Tehama					2
Tulare	8		16	786	10
Tuolumne			1		
Ventura				1	
Yolo			2	54	
Yuba			3	22	2
Totals	89	9	120	2,978	89

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TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	27	1	0
	YTD	89	4	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	69	17
	YTD	1,338	120

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	398	8	2	0
	YTD	6,761	89	2	0

Mosquitoes

		Positive / Total Tested					
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA
		163 / 1,548	52 / 1,452	0 / 1,316	0 / 125	0 / 125	0 / 125
		YTD	2,978 / 34,925	276 / 31,655	0 / 29,497	0 / 702	0 / 702

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Los Angeles	91303	American Crow	9/6/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Calabasas	91302	American Crow	9/2/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	La Verne	91750	American Crow	9/10/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90025	American Crow	8/27/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90036	American Crow	8/26/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90036	American Crow	9/10/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Tarzana	91356	American Crow	8/28/2019	WNV
Orange	Orange Co VCD	Huntington Beach	92649	American Crow	8/28/2019	WNV
Orange	Orange Co VCD	Santa Ana	92705	American Crow	9/6/2019	WNV

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Orange	Orange Co VCD	Tustin	92782	American Crow	9/6/2019	WNV
Orange	Orange Co VCD	Westminster	92683	American Crow	9/6/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Crow	9/10/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95757	California Scrub-Jay	9/5/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95757	Mourning Dove	9/4/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95823	Snowy Egret	9/6/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95835	Mourning Dove	9/6/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	California Scrub-Jay	9/6/2019	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Fresno	FRWS1202	278	Cx. tarsalis	Firebaugh	50	CO2	9/10/19	WNV
Fresno	FRWS5110	281	Cx. tarsalis		50	CO2	9/10/19	WNV
Fresno	FRWS5302	283	Cx. tarsalis		50	CO2	9/10/19	WNV
Fresno	FRNO187	535	Cx. quinquefasciatus	Biola	8	BGSENT	9/4/19	WNV
Fresno	FRNO50	550	Cx. quinquefasciatus	Fresno	50	GRVD	9/4/19	WNV
Fresno	FRNO109	555	Cx. quinquefasciatus	Kerman	17	GRVD	9/4/19	WNV
Fresno	FRNO8006	557	Cx. quinquefasciatus	Kerman	23	BGSENT	9/10/19	WNV
Fresno	FRNO214	562	Cx. quinquefasciatus	Kerman	31	CO2	9/10/19	WNV
Fresno	FRNO8007	572	Cx. quinquefasciatus	Fresno	8	BGSENT	9/11/19	SLEV
Fresno	FRNO104	582	Cx. quinquefasciatus	Fresno	31	GRVD	9/12/19	WNV
Fresno	CNSL5165	697	Cx. quinquefasciatus	Kingsburg	23	GRVD	9/4/19	WNV
Fresno	CNSL5037	700	Cx. quinquefasciatus	Kingsburg	28	GRVD	9/4/19	SLEV
Fresno	CNSL5037	700	Cx. quinquefasciatus	Kingsburg	28	GRVD	9/4/19	WNV
Fresno	CNSL6298	704	Cx. quinquefasciatus	Caruthers-Raisin City	16	GRVD	9/4/19	WNV
Fresno	CNSL4151	705	Cx. quinquefasciatus	Selma	12	GRVD	9/4/19	SLEV
Fresno	CNSL4151	705	Cx. quinquefasciatus	Selma	12	GRVD	9/4/19	WNV
Fresno	CNSL4151	706	Cx. quinquefasciatus	Selma	45	GRVD	9/4/19	SLEV
Fresno	CNSL4195	709	Cx. quinquefasciatus	Fowler	40	GRVD	9/4/19	WNV
Fresno	CNSL4226	711	Cx. quinquefasciatus	Fowler	36	GRVD	9/4/19	SLEV
Fresno	CNSL4226	711	Cx. quinquefasciatus	Fowler	36	GRVD	9/4/19	WNV
Fresno	CNSL4173	713	Cx. quinquefasciatus	Fowler	29	GRVD	9/4/19	SLEV
Fresno	CNSL3380	714	Cx. quinquefasciatus	Reedley	50	GRVD	9/4/19	SLEV
Fresno	CNSL1174	718	Cx. quinquefasciatus	Fresno	15	GRVD	9/5/19	WNV
Fresno	CNSL1705	729	Cx. quinquefasciatus	Fresno	25	GRVD	9/5/19	WNV
Fresno	CNSL1955	738	Cx. quinquefasciatus	Clovis	50	GRVD	9/6/19	WNV
Fresno	CNSL1388	744	Cx. quinquefasciatus	Fresno	13	GRVD	9/6/19	WNV
Imperial	IMPR40	68	Cx. tarsalis	Imperial	22	BGSENT	9/3/19	SLEV
Imperial	IMPR40	68	Cx. tarsalis	Imperial	22	BGSENT	9/3/19	WNV
Imperial	IMPR20	69	Cx. quinquefasciatus	Westmorland	31	BGSENT	9/6/19	SLEV
Kern	DLNO102	229	Cx. quinquefasciatus	McFarland	35	GRVD	9/6/19	WNV
Kern	DLNO49	230	Cx. quinquefasciatus	McFarland	37	GRVD	9/6/19	WNV
Kern	DLNO83	231	Cx. quinquefasciatus	McFarland	37	GRVD	9/6/19	SLEV
Kern	DLNO119	232	Cx. quinquefasciatus	Delano	32	GRVD	9/6/19	WNV
Kern	DLNO38	233	Cx. quinquefasciatus	Delano	21	GRVD	9/6/19	SLEV
Kern	DLNO89	234	Cx. quinquefasciatus	Delano	48	GRVD	9/6/19	SLEV
Kern	DLNO53	235	Cx. quinquefasciatus	Delano	30	GRVD	9/6/19	SLEV
Kern	DLNO53	235	Cx. quinquefasciatus	Delano	30	GRVD	9/6/19	WNV

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Los Angeles	ANTV8560	122	Cx. quinquefasciatus	Lancaster	8	GRVD	9/10/19	SLEV
Los Angeles	ANTV474588	124	Cx. quinquefasciatus	Lancaster	6	GRVD	9/10/19	WNV
Los Angeles	SGVA15	777	Cx. quinquefasciatus	Glendora	50	GRVD	9/6/19	WNV
Los Angeles	SGVA994	795	Cx. quinquefasciatus	Baldwin Park	50	GRVD	9/10/19	WNV
Los Angeles	GRLA2383	899	Cx. quinquefasciatus	South Whittier	50	GRVD	9/4/19	WNV
Los Angeles	GRLA2740	903	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/6/19	WNV
Los Angeles	GRLA2321	912	Cx. quinquefasciatus	Carson	50	GRVD	9/6/19	WNV
Madera	MADR178	262	Cx. quinquefasciatus	Madera	50	CO2	9/4/19	WNV
Madera	MADR896	263	Cx. quinquefasciatus	Madera West	50	CO2	9/5/19	SLEV
Madera	MADR896	263	Cx. quinquefasciatus	Madera West	50	CO2	9/5/19	WNV
Madera	MADR12	271	Cx. tarsalis	Madera Acres	50	CO2	9/6/19	WNV
Madera	MADR195	272	Cx. quinquefasciatus	Chowchilla	50	CO2	9/6/19	WNV
Madera	MADR195	273	Cx. tarsalis	Chowchilla	50	CO2	9/6/19	WNV
Madera	MADR3334	275	Cx. tarsalis	Parkwood	30	CO2	9/6/19	WNV
Merced	MERC176844	618	Cx. pipiens	Merced	43	BGSENT	9/6/19	WNV
Merced	MERC411	622	Cx. tarsalis	Los Banos	6	CO2	9/5/19	WNV
Merced	MERC655551	624	Cx. tarsalis	Dos Palos	13	CO2	9/5/19	WNV
Merced	MERC201778	625	Cx. pipiens	Merced	5	CO2	9/10/19	WNV
Merced	MERC201782	626	Cx. pipiens	Merced	26	CO2	9/11/19	WNV
Merced	MERC1103	640	Cx. pipiens	Atwater	50	CO2	9/12/19	WNV
Merced	MERC1103	641	Cx. pipiens	Atwater	50	CO2	9/12/19	WNV
Merced	MERC1103	644	Cx. pipiens	Atwater	50	CO2	9/12/19	WNV
Merced	MERC1103	646	Cx. pipiens	Atwater	50	CO2	9/12/19	WNV
Merced	MERC201523	658	Cx. pipiens	McSwain	50	CO2	9/12/19	WNV
Orange	ORCO218	3779	Cx. quinquefasciatus		37	GRVD	9/10/19	WNV
Orange	ORCO218	3782	Cx. quinquefasciatus		33	GRVD	9/10/19	WNV
Orange	ORCO1005	3784	Cx. quinquefasciatus		32	GRVD	9/10/19	WNV
Orange	ORCO1005	3795	Cx. quinquefasciatus		50	GRVD	9/10/19	WNV
Orange	ORCO1005	3799	Cx. quinquefasciatus		31	GRVD	9/10/19	WNV
Orange	ORCO218	3808	Cx. quinquefasciatus		26	GRVD	9/10/19	WNV
Orange	ORCO1005	3811	Cx. quinquefasciatus		24	GRVD	9/10/19	WNV
Orange	ORCO218	3820	Cx. quinquefasciatus		36	GRVD	9/10/19	WNV
Orange	ORCO1005	3825	Cx. quinquefasciatus		31	GRVD	9/10/19	WNV
Orange	ORCO218	3827	Cx. quinquefasciatus		39	GRVD	9/10/19	WNV
Orange	ORCO218	3828	Cx. quinquefasciatus		23	GRVD	9/10/19	WNV
Orange	ORCO1005	3836	Cx. quinquefasciatus		28	GRVD	9/10/19	WNV
Orange	ORCO241	3840	Cx. quinquefasciatus		34	GRVD	9/10/19	WNV
Orange	ORCO235	3841	Cx. quinquefasciatus		50	GRVD	9/10/19	WNV
Orange	ORCO218	3843	Cx. quinquefasciatus		43	GRVD	9/10/19	WNV
Orange	ORCO1006	3846	Cx. quinquefasciatus		21	GRVD	9/10/19	WNV
Orange	ORCO218	3848	Cx. quinquefasciatus		28	GRVD	9/10/19	WNV
Orange	ORCO235	3849	Cx. quinquefasciatus		25	GRVD	9/10/19	WNV
Orange	ORCO320	3862	Cx. quinquefasciatus		52	GRVD	9/10/19	WNV
Orange	ORCO52	3882	Cx. quinquefasciatus		30	GRVD	9/10/19	WNV
Orange	ORCO3	3908	Cx. quinquefasciatus		34	GRVD	9/10/19	WNV
Orange	ORCO318	3909	Cx. quinquefasciatus		19	GRVD	9/11/19	WNV
Orange	ORCO1006	3935	Cx. quinquefasciatus		29	GRVD	9/12/19	WNV
Orange	ORCO1008	3936	Cx. quinquefasciatus		44	GRVD	9/12/19	WNV
Orange	ORCO1008	3938	Cx. quinquefasciatus		27	GRVD	9/12/19	WNV
Orange	ORCO1005	3943	Cx. quinquefasciatus		21	GRVD	9/12/19	WNV
Riverside	NWST290	173	Cx. quinquefasciatus	Eastvale	30	CO2	9/5/19	WNV
Riverside	RIVR54	469	Cx. tarsalis	Moreno Valley	50	CO2	9/4/19	SLEV
Riverside	RIVR54	469	Cx. tarsalis	Moreno Valley	50	CO2	9/4/19	WNV
Riverside	RIVR31	491	Cx. tarsalis	Lakeview	50	CO2	9/4/19	WNV

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Riverside	COAV37	5001	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV37	5002	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV37	5003	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV537	5007	Cx. tarsalis		31	CO2	9/10/19	SLEV
Riverside	COAV5	5018	Cx. tarsalis		25	CO2	9/10/19	WNV
Riverside	COAV130	5021	Cx. tarsalis		49	CO2	9/10/19	SLEV
Riverside	COAV68	5022	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV68	5023	Cx. tarsalis		47	CO2	9/10/19	SLEV
Riverside	COAV10	5027	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV10	5028	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV35	5030	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV35	5031	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV35	5031	Cx. tarsalis		50	CO2	9/10/19	WNV
Riverside	COAV131	5033	Cx. tarsalis	Oasis	28	CO2	9/10/19	WNV
Riverside	COAV37	5034	Cx. quinquefasciatus		20	CO2	9/10/19	SLEV
Riverside	COAV13	5044	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV13	5046	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV13	5047	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV610	5049	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV34	5051	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV27	5053	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV27	5054	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV27	5055	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV27	5056	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV33	5059	Cx. tarsalis		50	CO2	9/10/19	SLEV
Riverside	COAV30	5061	Cx. tarsalis	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV30	5063	Cx. quinquefasciatus	Oasis	50	CO2	9/10/19	SLEV
Riverside	COAV538	5065	Cx. tarsalis	Vista Santa Rosa	50	CO2	9/10/19	SLEV
Riverside	COAV538	5065	Cx. tarsalis	Vista Santa Rosa	50	CO2	9/10/19	WNV
Riverside	COAV121	5122	Cx. tarsalis		50	CO2	9/12/19	WNV
Riverside	COAV121	5123	Cx. tarsalis		50	CO2	9/12/19	WNV
Sacramento	SAYO261003	5442	Cx. pipiens	Isleton	1	GRVD	9/6/19	WNV
Sacramento	SAYO271005	5448	Cx. pipiens	Isleton	7	CO2	9/6/19	WNV
Sacramento	SAYO242013	5472	Cx. pipiens	Sacramento	4	CO2	9/6/19	WNV
Sacramento	SAYO232028	5473	Cx. tarsalis	Sacramento	4	CO2	9/6/19	WNV
Sacramento	SAYO204051	5475	Cx. pipiens	Citrus Heights	5	CO2	9/6/19	WNV
Sacramento	SAYO214011	5477	Cx. tarsalis	Fair Oaks	6	CO2	9/6/19	WNV
Sacramento	SAYO214011	5478	Cx. pipiens	Fair Oaks	3	CO2	9/6/19	WNV
Sacramento	SAYO214011	5479	Cx. pipiens	Fair Oaks	2	GRVD	9/6/19	WNV
Sacramento	SAYO204020	5480	Cx. pipiens	Foothill Farms	1	GRVD	9/6/19	WNV
Sacramento	SAYO205029	5481	Cx. tarsalis	Orangevale	2	CO2	9/6/19	WNV
Sacramento	SAYO205029	5482	Cx. pipiens	Orangevale	1	GRVD	9/6/19	WNV
Sacramento	SAYO205028	5483	Cx. tarsalis	Orangevale	1	CO2	9/6/19	WNV
Sacramento	SAYO205028	5484	Cx. pipiens	Orangevale	1	GRVD	9/6/19	WNV
Sacramento	SAYO214046	5488	Cx. pipiens	Rancho Cordova	5	GRVD	9/6/19	WNV
Sacramento	SAYO233068	5532	Cx. pipiens	Elk Grove	51	CO2	9/10/19	WNV
Sacramento	SAYO232038	5550	Cx. pipiens	Sacramento	7	CO2	9/10/19	WNV
Sacramento	SAYO212033	5560	Cx. tarsalis	Sacramento	50	CO2	9/10/19	WNV
San Bernardino	WVAL8003	2248	Cx. tarsalis	Chino	50	CO2	9/11/19	SLEV
San Joaquin	SJCM8041	2046	Cx. tarsalis	Lodi	50	CO2	9/10/19	WNV
San Joaquin	SJCM8079	2065	Cx. pipiens	Manteca	50	CO2	9/10/19	WNV
San Joaquin	SJCM8008	2072	Cx. tarsalis	Manteca	50	CO2	9/10/19	WNV
San Joaquin	SJCM8008	2074	Cx. pipiens	Manteca	8	CO2	9/10/19	WNV
San Joaquin	SJCM8199	2079	Cx. tarsalis	Manteca	50	CO2	9/10/19	WNV

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San Joaquin	SJCM8199	2083	Cx. pipiens	Manteca	50	CO2	9/10/19	WNV
San Joaquin	SJCM8205	2114	Cx. pipiens	Farmington	50	CO2	9/12/19	WNV
San Joaquin	SJCM8205	2115	Cx. pipiens	Farmington	50	CO2	9/12/19	WNV
San Joaquin	SJCM8208	2128	Cx. tarsalis	Lockeford	50	CO2	9/12/19	WNV
San Joaquin	SJCM8208	2129	Cx. tarsalis	Lockeford	50	CO2	9/12/19	WNV
San Joaquin	SJCM8208	2130	Cx. tarsalis	Lockeford	50	CO2	9/12/19	WNV
San Joaquin	SJCM8208	2131	Cx. pipiens	Lockeford	50	CO2	9/12/19	WNV
San Joaquin	SJCM8208	2132	Cx. pipiens	Lockeford	10	CO2	9/12/19	WNV
San Joaquin	SJCM8070	2133	Cx. tarsalis	Lodi	50	CO2	9/12/19	WNV
San Joaquin	SJCM8070	2135	Cx. pipiens	Lodi	50	CO2	9/12/19	WNV
San Joaquin	SJCM8070	2137	Cx. pipiens	Lodi	50	CO2	9/12/19	WNV
San Joaquin	SJCM8070	2138	Cx. pipiens	Lodi	50	CO2	9/12/19	WNV
San Joaquin	SJCM8070	2139	Cx. pipiens	Lodi	7	CO2	9/12/19	WNV
Solano	SOLA321	667	Cx. pipiens	Suisun City	9	CO2	9/10/19	WNV
Solano	SOLA1	687	Cx. tarsalis	Dixon	50	CO2	9/12/19	WNV
Solano	SOLA1	688	Cx. tarsalis	Dixon	50	CO2	9/12/19	WNV
Solano	SOLA1	689	Cx. tarsalis	Dixon	47	CO2	9/12/19	WNV
Stanislaus	TRLK17152	1023	Cx. pipiens	Denair	50	CO2	9/6/19	WNV
Stanislaus	TRLK19376	1029	Cx. pipiens	Turlock	12	CO2	9/6/19	WNV
Stanislaus	TRLK536	1034	Cx. pipiens	Turlock	38	CO2	9/10/19	WNV
Stanislaus	TRLK1301	1035	Cx. pipiens	Denair	50	CO2	9/10/19	WNV
Stanislaus	TRLK1301	1038	Cx. tarsalis	Denair	37	CO2	9/10/19	SLEV
Stanislaus	TRLK1214	1048	Cx. tarsalis	Turlock	13	CO2	9/10/19	SLEV
Stanislaus	TRLK432	1052	Cx. pipiens		50	CO2	9/10/19	WNV
Stanislaus	TRLK432	1055	Cx. pipiens		50	CO2	9/10/19	WNV
Stanislaus	TRLK432	1058	Cx. tarsalis		50	CO2	9/10/19	WNV
Stanislaus	TRLK432	1059	Cx. tarsalis	Turlock	50	CO2	9/10/19	SLEV
Stanislaus	TRLK432	1060	Cx. tarsalis		50	CO2	9/10/19	WNV
Stanislaus	TRLK432	1061	Cx. tarsalis		30	CO2	9/10/19	WNV
Stanislaus	TRLK1308	1062	Cx. tarsalis		50	CO2	9/10/19	WNV
Stanislaus	TRLK1308	1066	Cx. pipiens		50	CO2	9/10/19	WNV
Stanislaus	TRLK516	1081	Cx. pipiens		50	CO2	9/10/19	WNV
Stanislaus	TRLK516	1083	Cx. tarsalis		40	CO2	9/10/19	WNV
Stanislaus	TRLK18181	1085	Cx. pipiens	Hickman	36	CO2	9/10/19	WNV
Stanislaus	TRLK1906	1091	Cx. pipiens		47	CO2	9/10/19	WNV
Stanislaus	TRLK17152	1105	Cx. pipiens	Denair	43	CO2	9/10/19	WNV
Stanislaus	EAST1083	19154	Cx. tarsalis	Modesto	15	CO2	8/8/19	WNV
Stanislaus	EAST1013	19177	Cx. tarsalis	Salida	31	CO2	8/21/19	WNV
Tulare	DLTA9607	3252	Cx. quinquefasciatus	Exeter	13	BGSENT	9/6/19	WNV
Tulare	DLTA8414	3254	Cx. quinquefasciatus	Visalia	50	CO2	9/6/19	WNV
Tulare	DLTA6518	3276	Cx. quinquefasciatus	Orosi	24	GRVD	9/6/19	WNV
Tulare	DLTA6508	3278	Cx. quinquefasciatus	Orosi	10	GRVD	9/6/19	WNV
Tulare	DLTA6408	3280	Cx. quinquefasciatus	Dinuba	26	GRVD	9/6/19	WNV
Tulare	DLTA8419	3283	Cx. quinquefasciatus	Goshen	18	CO2	9/10/19	WNV
Tulare	DLTA6408	3306	Cx. quinquefasciatus	Dinuba	24	GRVD	9/10/19	SLEV
Tulare	DLTA8426	3312	Cx. quinquefasciatus	Visalia	11	BGSENT	9/10/19	SLEV
Tulare	DLTA6406	3322	Cx. tarsalis	Dinuba	13	CO2	9/11/19	WNV
Tulare	DLTA6404	3323	Cx. quinquefasciatus	Dinuba	45	CO2	9/11/19	WNV
Tulare	DLTA6404	3330	Cx. tarsalis	Dinuba	16	CO2	9/11/19	SLEV
Tulare	DLTA8413	3334	Cx. quinquefasciatus	Visalia	18	GRVD	9/11/19	WNV
Tulare	DLTA9512	3341	Cx. quinquefasciatus	Farmersville	24	GRVD	9/11/19	WNV
Tulare	DLTA9602	3347	Cx. quinquefasciatus	Exeter	10	GRVD	9/11/19	WNV
Tulare	DLTA8324	3354	Cx. quinquefasciatus	Visalia	43	BGSENT	9/11/19	WNV
Tulare	DLTA8434	3355	Cx. quinquefasciatus	Visalia	21	BGSENT	9/11/19	WNV

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Tulare	DLTA8414	3359	Cx. quinquefasciatus	Visalia	50	CO2	9/12/19	SLEV
Tulare	DLTA8413	3365	Cx. quinquefasciatus	Visalia	37	CO2	9/12/19	SLEV
Tulare	DLTA9505	3372	Cx. quinquefasciatus	Visalia	10	BGSENT	9/12/19	WNV
Tulare	DLTA8427	3380	Cx. quinquefasciatus	Visalia	41	GRVD	9/12/19	SLEV
Tulare	DLTA9504	3392	Cx. quinquefasciatus	Visalia	31	GRVD	9/12/19	WNV
Tulare	DLTA9412	3393	Cx. quinquefasciatus	Visalia	11	BGSENT	9/12/19	SLEV
Yolo	SAYO135006	5390	Cx. tarsalis		29	CO2	9/6/19	WNV
Yolo	SAYO135016	5408	Cx. tarsalis	Woodland	50	CO2	9/6/19	WNV
Yolo	SAYO135016	5410	Cx. pipiens	Woodland	3	CO2	9/6/19	WNV
Yolo	SAYO146006	5499	Cx. tarsalis	Davis	50	CO2	9/10/19	WNV
Yolo	SAYO146006	5500	Cx. tarsalis	Davis	38	CO2	9/10/19	WNV
Yolo	SAYO145013	5515	Cx. tarsalis	Davis	50	CO2	9/10/19	WNV
Yolo	SAYO103007	5589	Cx. tarsalis	Dunnigan	50	CO2	9/10/19	WNV
Yolo	SAYO104006	5594	Cx. tarsalis	Knights Landing	50	CO2	9/10/19	WNV
Yolo	SAYO104006	5595	Cx. tarsalis	Knights Landing	50	CO2	9/10/19	WNV
Yolo	SAYO115008	5600	Cx. tarsalis	Knights Landing	50	CO2	9/10/19	WNV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Los Angeles	LACW1007	Baldwin Hills	9/5/2019	WNV	1632		
Los Angeles	LACW1009	Los Angeles	9/4/2019	WNV	1636		
Merced	MERC0501	El Nido	8/30/2019	SLEV	1528	1529	
Placer	PLCR0758	Lincoln	9/9/2019	WNV	4613	4615	
Solano	SOLA0125	Cordelia	9/3/2019	WNV	1586	1588	1589
Solano	SOLA0015	Winters	9/3/2019	WNV	1578		

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://www.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html