

California Arbovirus Surveillance Bulletin #18

Week 31 Friday, August 2, 2019



Weekly Update

Humans

Two human cases of West Nile virus (WNV) illness were reported this week from Fresno (1) and Stanislaus (1) counties. **These are the first WNV human cases reported from Fresno and Stanislaus counties this year.** In 2019, a total of four human WNV cases have been reported from four counties. Of the four reported cases, three (75%) were classified as neuroinvasive disease and one (25%) was fatal. The median age of the individuals is 67 years (range: 38–74 years) and two (50%) are male. In addition to the four cases, seven asymptomatic infections have been reported from Kern (2), Madera (1), San Bernardino (2), Stanislaus (1), and Sutter (1) counties. At this time last year, 12 human cases of WNV illness had been reported from eight counties.

Dead Birds

A total of nine WNV positive dead birds were reported this week from five counties: Fresno (1), Los Angeles (1), Orange (1), Sacramento (4), and Tulare (2). In 2019, a total of 43 WNV positive dead birds have been reported from eight counties. At this time last year, 232 WNV positive dead birds had been reported from 16 counties.

Mosquito Pools

West Nile virus

A total of 277 WNV positive mosquito pools were reported this week from 18 counties: Butte (1), Fresno (50), Imperial (1), Kern (21), Kings (10), Los Angeles (1), Madera (10), Merced (8), Orange (1), Placer (3), Riverside (44), Sacramento (4), San Bernardino (5), San Joaquin (5), Stanislaus (9), Sutter (1), Tulare (100), and Yuba (3). **This is the first WNV positive mosquito pool reported from Imperial County this year.** In 2019, a total of 1,371 WNV positive mosquito pools have been reported from 20 counties. At this time last year, 674 WNV positive mosquito pools had been reported from 24 counties.

St. Louis encephalitis virus

This week, a total of 34 mosquito pools were reported positive for St. Louis encephalitis virus (SLEV) from five counties: Fresno (4), Imperial (3), Kern (7), Riverside (1), and Tulare (19). **This is the first detection of SLEV from Imperial County this year.** In 2019, a total of 95 SLEV positive mosquito pools have been reported from five counties: Fresno (20), Imperial (3), Kern (25), Riverside (9), and Tulare (38). At this time last year, 161 SLEV positive mosquito pools had been reported from five counties.

Sentinel Chickens

Three WNV seroconversions were reported this week from Los Angeles County; these are the first WNV positive chickens reported in 2019. At this time last year, 14 WNV seroconversions had been reported from four counties.

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2018 & 2019 YTD West Nile Virus Comparisons		
	2018	2019
Total # Dead Bird Reports	4,762	3,388
# Positive Counties	28	21
# Human Cases	12	4
# Positive Dead Birds / # Tested	232 / 1,200	43 / 1,019
# Positive Mosquito Pools / # Tested	674 / 23,285	1,371 / 23,159
# Seroconversions / # Tested	14 / 5,517	3 / 4,736

YTD WNV Activity by Element and County, 2019				
County	Humans	Dead Birds	Mosquito Pools	Sentinel Chickens
Butte			2	
Fresno	1	7	222	
Imperial	1		1	
Kern			56	
Kings			23	
Los Angeles		6	7	3
Madera			19	
Merced		1	14	
Orange		9	2	
Placer			4	
Riverside			472	
Sacramento		7	11	
San Bernardino	1		15	
San Diego		1		
San Joaquin		3	25	
Shasta			1	
Stanislaus	1		19	
Sutter			2	
Tulare		9	467	
Ventura			1	
Yuba			8	
Totals	4	43	1,371	3

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TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	2	0	0
	YTD	4	0	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	45	9
	YTD	1,019	43

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	319	3	0	0
	YTD	4,736	3	0	0

Mosquitoes

		Positive / Total Tested					
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA
		277 / 1,875	34 / 1,662	0 / 1,526	0 / 0	0 / 0	0 / 0
		YTD	1,371 / 23,159	95 / 21,019	0 / 19,774	0 / 283	0 / 283

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Fresno	Fresno MVCD	Fresno	93722	American Crow	7/31/2019	WNV
Los Angeles	Los Angeles Co Veterinarian	Beverly Hills	90212	American Crow	7/23/2019	WNV
Orange	Orange Co VCD	Buena Park	90621	House Sparrow	7/26/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	California Scrub-Jay	7/26/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Herald	95638	Western Kingbird	7/25/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Herald	95638	Western Kingbird	7/25/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	American Crow	7/24/2019	WNV
Tulare	Delta VCD	Visalia	93277	American Crow	7/31/2019	WNV
Tulare	Delta VCD	Visalia	93292	California Scrub-Jay	7/31/2019	WNV

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Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO91	212	Cx. tarsalis	Biggs	50	CO2	7/29/19	WNV
Fresno	CNSL1298	364	Cx. quinquefasciatus	Clovis	38	GRVD	7/24/19	WNV
Fresno	CNSL1311	360	Cx. quinquefasciatus	Clovis	14	GRVD	7/24/19	WNV
Fresno	CNSL1525	369	Cx. quinquefasciatus	Fresno	37	GRVD	7/24/19	WNV
Fresno	CNSL1611	367	Cx. quinquefasciatus	Fresno	50	GRVD	7/24/19	WNV
Fresno	CNSL1611	368	Cx. quinquefasciatus	Fresno	33	GRVD	7/24/19	WNV
Fresno	CNSL1889	370	Cx. quinquefasciatus	Fresno	46	GRVD	7/24/19	WNV
Fresno	CNSL3071	346	Cx. quinquefasciatus	Parlier	37	GRVD	7/23/19	WNV
Fresno	CNSL3238	300	Cx. quinquefasciatus	Reedley	50	GRVD	7/25/19	WNV
Fresno	CNSL3238	383	Cx. stigmatosoma	Reedley	23	GRVD	7/25/19	SLEV
Fresno	CNSL3238	383	Cx. stigmatosoma	Reedley	23	GRVD	7/25/19	WNV
Fresno	CNSL3239	295	Cx. quinquefasciatus	Reedley	23	GRVD	7/25/19	WNV
Fresno	CNSL3268	301	Cx. quinquefasciatus	Reedley	50	GRVD	7/25/19	WNV
Fresno	CNSL3302	373	Cx. quinquefasciatus	Reedley	50	GRVD	7/25/19	WNV
Fresno	CNSL3302	382	Cx. stigmatosoma	Reedley	50	GRVD	7/25/19	WNV
Fresno	CNSL4011	399	Cx. quinquefasciatus	Fowler	14	GRVD	7/26/19	WNV
Fresno	CNSL4017	354	Cx. quinquefasciatus	Selma	46	GRVD	7/23/19	WNV
Fresno	CNSL4020	358	Cx. quinquefasciatus	Selma	49	GRVD	7/26/19	WNV
Fresno	CNSL4021	361	Cx. quinquefasciatus	Selma	38	GRVD	7/26/19	WNV
Fresno	CNSL4024	345	Cx. quinquefasciatus	Selma	12	GRVD	7/26/19	WNV
Fresno	CNSL4084	356	Cx. quinquefasciatus	Selma	43	GRVD	7/23/19	WNV
Fresno	CNSL4140	355	Cx. quinquefasciatus	Selma	23	GRVD	7/23/19	WNV
Fresno	CNSL4141	351	Cx. quinquefasciatus	Selma	46	GRVD	7/23/19	WNV
Fresno	CNSL4141	352	Cx. quinquefasciatus	Selma	14	BGSENT	7/23/19	WNV
Fresno	CNSL4186	396	Cx. quinquefasciatus	Fowler	31	GRVD	7/26/19	SLEV
Fresno	CNSL4186	396	Cx. quinquefasciatus	Fowler	31	GRVD	7/26/19	WNV
Fresno	CNSL4186	398	Cx. quinquefasciatus	Fowler	47	GRVD	7/26/19	SLEV
Fresno	CNSL4186	398	Cx. quinquefasciatus	Fowler	47	GRVD	7/26/19	WNV
Fresno	CNSL4198	393	Cx. quinquefasciatus	Fowler	44	GRVD	7/26/19	SLEV
Fresno	CNSL4198	393	Cx. quinquefasciatus	Fowler	44	GRVD	7/26/19	WNV
Fresno	CNSL4198	394	Cx. quinquefasciatus	Fowler	31	GRVD	7/26/19	WNV
Fresno	CNSL4210	395	Cx. quinquefasciatus	Fowler	22	GRVD	7/26/19	WNV
Fresno	CNSL4210	397	Cx. quinquefasciatus	Fowler	22	GRVD	7/26/19	WNV
Fresno	CNSL5037	386	Cx. quinquefasciatus	Kingsburg	50	GRVD	7/25/19	WNV
Fresno	CNSL5044	350	Cx. quinquefasciatus	Kingsburg	25	GRVD	7/23/19	WNV
Fresno	CNSL5188	387	Cx. quinquefasciatus	Kingsburg	14	GRVD	7/25/19	WNV
Fresno	CNSL8022	344	Cx. quinquefasciatus	Clovis	19	GRVD	7/23/19	WNV
Fresno	CNSL8107	371	Cx. quinquefasciatus	Fresno	50	GRVD	7/24/19	WNV
Fresno	CNSL9098	363	Cx. quinquefasciatus	Clovis	21	GRVD	7/24/19	WNV
Fresno	FRNO116	360	Cx. quinquefasciatus	Fresno	16	GRVD	7/30/19	WNV
Fresno	FRNO153	373	Cx. quinquefasciatus		30	BGSENT	7/31/19	WNV
Fresno	FRNO165	358	Cx. quinquefasciatus		34	GRVD	7/30/19	WNV
Fresno	FRNO177	384	Cx. quinquefasciatus		50	GRVD	8/1/19	WNV
Fresno	FRNO177	385	Cx. quinquefasciatus		26	GRVD	8/1/19	WNV
Fresno	FRNO179	389	Cx. quinquefasciatus		26	BGSENT	8/1/19	WNV
Fresno	FRNO189	382	Cx. quinquefasciatus		50	GRVD	8/1/19	WNV
Fresno	FRNO189	383	Cx. quinquefasciatus		33	GRVD	8/1/19	WNV
Fresno	FRNO194	388	Cx. quinquefasciatus		18	BGSENT	8/1/19	WNV
Fresno	FRNO207	387	Cx. quinquefasciatus	Fresno	19	GRVD	8/1/19	WNV
Fresno	FRNO208	346	Cx. quinquefasciatus	Fresno	13	GRVD	7/25/19	WNV

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Fresno	FRNO8	368	Cx. quinquefasciatus	Fresno	43	GRVD	7/30/19	WNV
Fresno	FRNO8006	359	Cx. quinquefasciatus		50	GRVD	7/30/19	WNV
Fresno	FRNO8008	356	Cx. quinquefasciatus		50	GRVD	7/30/19	WNV
Fresno	FRNO8008	357	Cx. quinquefasciatus		48	GRVD	7/30/19	WNV
Fresno	FRWS5302	165	Cx. tarsalis	Helm	44	CO2	7/30/19	WNV
Imperial	IMPR20	21	Cx. quinquefasciatus	Westmorland	41	BGSENT	7/26/19	SLEV
Imperial	IMPR40	23	Cx. quinquefasciatus	Imperial	50	BGSENT	7/26/19	SLEV
Imperial	IMPR40	23	Cx. quinquefasciatus	Imperial	50	BGSENT	7/26/19	WNV
Imperial	IMPR66	20	Cx. quinquefasciatus	Holtville	45	BGSENT	7/22/19	SLEV
Kern	DLNO117	155	Cx. quinquefasciatus	Delano	11	GRVD	7/30/19	WNV
Kern	DLNO38	144	Cx. quinquefasciatus	Delano	25	GRVD	7/26/19	WNV
Kern	DLNO51	147	Cx. quinquefasciatus	McFarland	50	GRVD	7/26/19	WNV
Kern	DLNO58	140	Cx. quinquefasciatus	McFarland	50	CO2	7/25/19	SLEV
Kern	DLNO68	142	Cx. quinquefasciatus	Delano	50	GRVD	7/26/19	WNV
Kern	DLNO88	150	Cx. quinquefasciatus	McFarland	50	GRVD	7/26/19	WNV
Kern	KERN111	449	Cx. quinquefasciatus	Arvin	50	CO2	7/23/19	WNV
Kern	KERN12	463	Cx. quinquefasciatus	Bakersfield	50	GRVD	7/26/19	WNV
Kern	KERN156	442	Cx. tarsalis	Butttonwillow	50	CO2	7/23/19	WNV
Kern	KERN2019	454	Cx. quinquefasciatus	Bakersfield	50	GRVD	7/24/19	SLEV
Kern	KERN2019	454	Cx. quinquefasciatus	Bakersfield	50	GRVD	7/24/19	WNV
Kern	KERN2039	439	Cx. quinquefasciatus	Bakersfield	34	GRVD	7/23/19	WNV
Kern	KERN3004	446	Cx. quinquefasciatus	Bakersfield	50	CO2	7/23/19	WNV
Kern	KERN3031	457	Cx. quinquefasciatus	Shafter	50	CO2	7/25/19	SLEV
Kern	KERN43	461	Cx. quinquefasciatus	Shafter	50	CO2	7/25/19	WNV
Kern	KERN8	458	Cx. tarsalis	Bakersfield	50	CO2	7/25/19	WNV
Kern	WEST6232	99	Cx. tarsalis	Tupman	50	CO2	7/31/19	WNV
Kern	WEST6270	111	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	SLEV
Kern	WEST6270	111	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	WNV
Kern	WEST6270	112	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	SLEV
Kern	WEST6270	112	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	WNV
Kern	WEST6271	101	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	WNV
Kern	WEST6271	102	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	SLEV
Kern	WEST6271	102	Cx. tarsalis	Buttonwillow	50	CO2	7/31/19	WNV
Kern	WEST6272	113	Cx. tarsalis	Bakersfield	50	CO2	7/31/19	SLEV
Kern	WEST6272	113	Cx. tarsalis	Bakersfield	50	CO2	7/31/19	WNV
Kern	WEST6272	114	Cx. tarsalis	Bakersfield	50	CO2	7/31/19	WNV
Kern	WEST6272	115	Cx. tarsalis	Bakersfield	50	CO2	7/31/19	WNV
Kings	KNGS3022	351	Cx. tarsalis	Hanford	30	CO2	7/25/19	WNV
Kings	KNGS3030	326	Cx. tarsalis	Lemoore	50	CO2	7/23/19	WNV
Kings	KNGS3043	329	Cx. tarsalis	Lemoore	42	CO2	7/23/19	WNV
Kings	KNGS3063	331	Cx. pipiens	Lemoore	17	BGSENT	7/24/19	WNV
Kings	KNGS4006	366	Cx. tarsalis	Hanford	18	CO2	7/26/19	WNV
Kings	KNGS4006	367	Cx. pipiens	Hanford	11	CO2	7/26/19	WNV
Kings	KNGS5506	358	Cx. pipiens	Hanford	25	BGSENT	7/26/19	WNV
Kings	KNGS5513	363	Cx. pipiens	Hanford	14	BGSENT	7/26/19	WNV
Kings	KNGS8038	338	Cx. tarsalis	Lemoore	50	CO2	7/24/19	WNV
Kings	KNGS8038	340	Cx. tarsalis	Lemoore	50	CO2	7/24/19	WNV
Los Angeles	SGVA994	519	Cx. quinquefasciatus	Baldwin Park	50	GRVD	7/30/19	WNV
Madera	MADR1109	142	Cx. tarsalis	Madera	50	CO2	7/24/19	WNV
Madera	MADR1109	143	Cx. tarsalis	Madera	50	CO2	7/24/19	WNV
Madera	MADR1109	144	Cx. tarsalis	Madera	50	CO2	7/24/19	WNV
Madera	MADR1109	145	Cx. tarsalis	Madera	50	CO2	7/24/19	WNV
Madera	MADR12	155	Cx. tarsalis	Madera	50	CO2	7/26/19	WNV
Madera	MADR195	156	Cx. tarsalis	Madera	50	CO2	7/26/19	WNV

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Madera	MADR195	158	Cx. quinquefasciatus	Madera	50	CO2	7/26/19	WNV
Madera	MADR3334	146	Cx. quinquefasciatus	Madera	50	CO2	7/24/19	WNV
Madera	MADR3334	147	Cx. tarsalis	Madera	50	CO2	7/24/19	WNV
Madera	MADR85	139	Cx. quinquefasciatus	Madera	33	CO2	7/23/19	WNV
Merced	MERC1104	418	Cx. pipiens	Delhi	12	CO2	8/1/19	WNV
Merced	MERC1222	390	Cx. pipiens	Merced	11	CO2	7/31/19	WNV
Merced	MERC1225	392	Cx. pipiens		50	CO2	7/31/19	WNV
Merced	MERC201720	410	Cx. tarsalis	Hilmar	35	CO2	8/1/19	WNV
Merced	MERC201723	398	Cx. pipiens	Winton	46	CO2	7/31/19	WNV
Merced	MERC404	409	Cx. pipiens	Hilmar	29	CO2	8/1/19	WNV
Merced	MERC612	406	Cx. tarsalis	Delhi	5	CO2	8/1/19	WNV
Merced	MERC612	407	Cx. pipiens	Delhi	39	CO2	8/1/19	WNV
Orange	ORCO1040	2617	Cx. quinquefasciatus	Orange	18	GRVD	7/30/19	WNV
Placer	PLCR1113	1168	Cx. tarsalis	Pleasant Grove	50	CO2	7/30/19	WNV
Placer	PLCR25	1130	Cx. tarsalis	Lincoln	50	CO2	7/30/19	WNV
Placer	PLCR668	1116	Cx. tarsalis	Elverta	34	CO2	7/30/19	WNV
Riverside	COAV0	4205	Cx. quinquefasciatus		27	GRVD	7/26/19	WNV
Riverside	COAV0	4206	Cx. quinquefasciatus		15	GRVD	7/26/19	WNV
Riverside	COAV0	4207	Cx. quinquefasciatus		46	GRVD	7/26/19	WNV
Riverside	COAV0	4210	Cx. quinquefasciatus		48	GRVD	7/26/19	WNV
Riverside	COAV0	4211	Cx. quinquefasciatus		29	GRVD	7/26/19	WNV
Riverside	COAV0	4234	Cx. quinquefasciatus		42	GRVD	7/26/19	WNV
Riverside	COAV0	4243	Cx. quinquefasciatus		35	GRVD	7/27/19	WNV
Riverside	COAV0	4283	Cx. quinquefasciatus		10	CO2	7/31/19	WNV
Riverside	COAV0	4288	Cx. quinquefasciatus		56	GRVD	7/30/19	WNV
Riverside	COAV0	4299	Cx. quinquefasciatus		15	GRVD	7/31/19	WNV
Riverside	COAV0	4302	Cx. quinquefasciatus		8	GRVD	7/31/19	WNV
Riverside	COAV10	4344	Cx. tarsalis	Thermal	50	CO2	7/30/19	WNV
Riverside	COAV10	4347	Cx. tarsalis	Thermal	50	CO2	7/30/19	WNV
Riverside	COAV13	4327	Cx. tarsalis	Mecca	43	CO2	7/30/19	WNV
Riverside	COAV132	4328	Cx. tarsalis	Mecca	50	CO2	7/30/19	WNV
Riverside	COAV132	4329	Cx. tarsalis	Mecca	50	CO2	7/30/19	WNV
Riverside	COAV200	4198	Cx. tarsalis	Mecca	50	BGSENT	7/26/19	WNV
Riverside	COAV200	4199	Cx. quinquefasciatus	Mecca	40	BGSENT	7/26/19	WNV
Riverside	COAV200	4320	Cx. quinquefasciatus	Mecca	44	GRVD	7/30/19	WNV
Riverside	COAV203	4356	Cx. quinquefasciatus	Palm Desert	32	GRVD	8/1/19	WNV
Riverside	COAV27	4351	Cx. tarsalis	North Shore	50	CO2	7/30/19	WNV
Riverside	COAV30	4349	Cx. quinquefasciatus	Mecca	50	CO2	7/30/19	WNV
Riverside	COAV302	4303	Cx. quinquefasciatus	Rancho Mirage	47	GRVD	8/1/19	WNV
Riverside	COAV320	4245	Cx. quinquefasciatus	Palm Desert	17	GRVD	7/27/19	WNV
Riverside	COAV321	4306	Cx. quinquefasciatus	Rancho Mirage	19	GRVD	8/1/19	WNV
Riverside	COAV322	4280	Cx. quinquefasciatus	Cathedral City	6	GRVD	7/31/19	WNV
Riverside	COAV328	4358	Cx. quinquefasciatus		30	GRVD	8/1/19	WNV
Riverside	COAV331	4352	Cx. quinquefasciatus	Palm Desert	30	CO2	8/1/19	WNV
Riverside	COAV35	4338	Cx. tarsalis	Mecca	50	CO2	7/30/19	WNV
Riverside	COAV37	4336	Cx. tarsalis	Mecca	50	CO2	7/30/19	WNV
Riverside	COAV407	4281	Cx. quinquefasciatus	Palm Springs	5	GRVD	7/31/19	WNV
Riverside	COAV415	4374	Cx. quinquefasciatus	Indian Wells	51	BGSENT	8/1/19	WNV
Riverside	COAV420	4256	Cx. quinquefasciatus	La Quinta	22	CO2	7/30/19	WNV
Riverside	COAV421	4258	Cx. quinquefasciatus	Indio	32	GRVD	7/30/19	WNV
Riverside	COAV427	4354	Cx. quinquefasciatus	Palm Desert	22	GRVD	8/1/19	WNV
Riverside	COAV431	4278	Cx. quinquefasciatus	Palm Springs	10	GRVD	7/31/19	WNV
Riverside	COAV542	4264	Cx. tarsalis	Mecca	5	CO2	7/30/19	WNV
Riverside	COAV6	4297	Cx. tarsalis	Mecca	11	CO2	7/30/19	SLEV

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Riverside	COAV6	4297	Cx. tarsalis	Mecca	11	CO2	7/30/19	WNV
Riverside	COAV604	4301	Cx. quinquefasciatus	Palm Springs	6	GRVD	7/31/19	WNV
Riverside	COAV604	4311	Cx. quinquefasciatus	Palm Springs	13	GRVD	8/1/19	WNV
Riverside	COAV610	4342	Cx. tarsalis		28	CO2	7/30/19	WNV
Riverside	COAV726	4272	Cx. quinquefasciatus	Palm Springs	5	BGSENT	7/31/19	WNV
Riverside	COAV752	4371	Cx. quinquefasciatus	Mecca	6	BGSENT	8/2/19	WNV
Riverside	COAV753	4201	Cx. tarsalis	Mecca	9	BGSENT	7/26/19	WNV
Sacramento	SAYO204020	3464	Cx. pipiens	Sacramento	18	GRVD	7/30/19	WNV
Sacramento	SAYO245001	3555	Cx. tarsalis	Herald	7	CO2	7/31/19	WNV
Sacramento	SAYO245001	3556	Cx. pipiens	Herald	13	CO2	7/31/19	WNV
Sacramento	SAYO255017	3553	Cx. pipiens	Herald	5	CO2	7/31/19	WNV
San Bernardino	SANB326	725	Cx. tarsalis	Rialto	12	CO2	8/1/19	WNV
San Bernardino	SANB351	696	Cx. stigmatosoma	Highland	9	CO2	7/31/19	WNV
San Bernardino	SANB371	728	Cx. quinquefasciatus	San Bernardino	2	CO2	8/1/19	WNV
San Bernardino	WVAL4238	1904	Cx. quinquefasciatus	Ontario	43	BGSENT	7/31/19	WNV
San Bernardino	WVAL7002	1866	Cx. quinquefasciatus	Montclair	36	GRVD	7/30/19	WNV
San Joaquin	SJCM8003	1172	Cx. tarsalis	Tracy	27	CO2	7/29/19	WNV
San Joaquin	SJCM8003	1173	Cx. pipiens	Tracy	35	CO2	7/29/19	WNV
San Joaquin	SJCM8010	1239	Cx. tarsalis	Ripon	37	CO2	7/29/19	WNV
San Joaquin	SJCM8010	1240	Cx. pipiens	Ripon	14	CO2	7/29/19	WNV
San Joaquin	SJCM8100	1177	Cx. tarsalis	Tracy	41	CO2	7/29/19	WNV
Stanislaus	TRLK1202	611	Cx. pipiens	Hughson	50	CO2	7/30/19	WNV
Stanislaus	TRLK1202	612	Cx. pipiens	Hughson	50	CO2	7/30/19	WNV
Stanislaus	TRLK17152	623	Cx. tarsalis	Denair	19	CO2	7/25/19	WNV
Stanislaus	TRLK18102	598	Cx. pipiens	Turlock	50	CO2	7/30/19	WNV
Stanislaus	TRLK19164	632	Cx. pipiens	Denair	50	CO2	7/25/19	WNV
Stanislaus	TRLK19164	637	Cx. pipiens	Denair	50	CO2	7/25/19	WNV
Stanislaus	TRLK432	574	Cx. pipiens	Turlock	50	CO2	7/30/19	WNV
Stanislaus	TRLK432	584	Cx. tarsalis	Turlock	49	CO2	7/30/19	WNV
Stanislaus	TRLK516	602	Cx. pipiens	Denair	50	CO2	7/30/19	WNV
Sutter	SUYA63	265	Cx. tarsalis	Live Oak	50	REST	7/29/19	WNV
Tulare	DLNO10	156	Cx. quinquefasciatus	Earlimart	20	GRVD	7/30/19	WNV
Tulare	DLTA6404	2293	Cx. quinquefasciatus	Dinuba	17	CO2	7/30/19	WNV
Tulare	DLTA6404	2295	Cx. quinquefasciatus	Dinuba	35	CO2	7/30/19	WNV
Tulare	DLTA6404	2296	Cx. tarsalis	Dinuba	26	CO2	7/30/19	WNV
Tulare	DLTA6404	2297	Cx. quinquefasciatus	Dinuba	50	CO2	7/30/19	WNV
Tulare	DLTA6404	2298	Cx. quinquefasciatus	Dinuba	50	CO2	7/30/19	WNV
Tulare	DLTA6404	2299	Cx. quinquefasciatus	Dinuba	38	CO2	7/30/19	WNV
Tulare	DLTA6404	2300	Cx. tarsalis	Dinuba	41	CO2	7/30/19	WNV
Tulare	DLTA6404	2301	Cx. stigmatosoma	Dinuba	21	CO2	7/30/19	WNV
Tulare	DLTA6404	2302	Cx. quinquefasciatus	Dinuba	21	CO2	7/30/19	WNV
Tulare	DLTA6404	2304	Cx. quinquefasciatus	Dinuba	40	CO2	7/30/19	WNV
Tulare	DLTA6404	2306	Cx. tarsalis	Dinuba	50	CO2	7/30/19	WNV
Tulare	DLTA6407	2332	Cx. quinquefasciatus	Dinuba	11	GRVD	7/30/19	WNV
Tulare	DLTA6407	2353	Cx. quinquefasciatus	Dinuba	22	GRVD	7/31/19	WNV
Tulare	DLTA6408	2252	Cx. quinquefasciatus	Dinuba	44	GRVD	7/26/19	WNV
Tulare	DLTA6416	2277	Cx. quinquefasciatus	Dinuba	16	GRVD	7/26/19	WNV
Tulare	DLTA6508	2256	Cx. quinquefasciatus	Orosi	19	GRVD	7/26/19	WNV
Tulare	DLTA7502	2245	Cx. quinquefasciatus	Seville	25	GRVD	7/26/19	WNV
Tulare	DLTA7517	2342	Cx. quinquefasciatus		50	CO2	7/31/19	WNV
Tulare	DLTA7517	2345	Cx. tarsalis		28	CO2	7/31/19	WNV
Tulare	DLTA7528	2340	Cx. quinquefasciatus	Ivanhoe	50	CO2	7/31/19	WNV
Tulare	DLTA7528	2341	Cx. quinquefasciatus	Ivanhoe	18	CO2	7/31/19	WNV
Tulare	DLTA7636	2349	Cx. quinquefasciatus	Woodlake	13	BGSENT	7/31/19	WNV

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Tulare	DLTA8324	2365	Cx. quinquefasciatus	Goshen	50	BGSENT	7/31/19	WNV
Tulare	DLTA8411	2188	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8411	2190	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8411	2191	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8411	2197	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8411	2211	Cx. tarsalis	Visalia	10	CO2	7/26/19	WNV
Tulare	DLTA8413	2356	Cx. quinquefasciatus	Visalia	48	GRVD	7/31/19	WNV
Tulare	DLTA8414	2212	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2213	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2214	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2215	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2216	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2217	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2218	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2219	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2221	Cx. tarsalis	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2222	Cx. tarsalis	Visalia	34	CO2	7/26/19	WNV
Tulare	DLTA8414	2223	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2229	Cx. quinquefasciatus	Visalia	50	CO2	7/26/19	WNV
Tulare	DLTA8414	2232	Cx. tarsalis	Visalia	34	CO2	7/26/19	WNV
Tulare	DLTA8414	2323	Cx. quinquefasciatus	Visalia	25	GRVD	7/30/19	WNV
Tulare	DLTA8414	2393	Cx. quinquefasciatus	Visalia	50	BGSENT	8/1/19	WNV
Tulare	DLTA8415	2175	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2175	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2176	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2176	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2177	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2178	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2178	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2179	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2179	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2180	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2180	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2181	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2181	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2182	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2183	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2183	Cx. quinquefasciatus		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2184	Cx. quinquefasciatus		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2185	Cx. quinquefasciatus		45	CO2	7/26/19	SLEV
Tulare	DLTA8415	2185	Cx. quinquefasciatus		45	CO2	7/26/19	WNV
Tulare	DLTA8415	2186	Cx. tarsalis		50	CO2	7/26/19	SLEV
Tulare	DLTA8415	2186	Cx. tarsalis		50	CO2	7/26/19	WNV
Tulare	DLTA8415	2187	Cx. tarsalis		32	CO2	7/26/19	SLEV
Tulare	DLTA8419	2269	Cx. quinquefasciatus	Goshen	42	GRVD	7/26/19	WNV
Tulare	DLTA8423	2368	Cx. quinquefasciatus	Visalia	50	BGSENT	7/31/19	SLEV
Tulare	DLTA8425	2275	Cx. quinquefasciatus	Visalia	45	GRVD	7/26/19	WNV
Tulare	DLTA8426	2276	Cx. quinquefasciatus	Visalia	12	GRVD	7/26/19	WNV
Tulare	DLTA8426	2309	Cx. quinquefasciatus	Visalia	17	BGSENT	7/30/19	WNV
Tulare	DLTA8427	2267	Cx. quinquefasciatus	Visalia	20	GRVD	7/26/19	WNV
Tulare	DLTA8427	2335	Cx. quinquefasciatus	Visalia	48	GRVD	7/30/19	WNV
Tulare	DLTA8427	2354	Cx. quinquefasciatus	Visalia	17	GRVD	7/31/19	WNV
Tulare	DLTA8434	2372	Cx. quinquefasciatus	Visalia	21	BGSENT	7/31/19	WNV
Tulare	DLTA8435	2280	Cx. quinquefasciatus	Visalia	11	GRVD	7/26/19	WNV

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Tulare	DLTA8435	2371	Cx. quinquefasciatus	Visalia	17	BGSENT	7/31/19	WNV
Tulare	DLTA8436	2274	Cx. quinquefasciatus	Visalia	47	GRVD	7/26/19	WNV
Tulare	DLTA8501	2359	Cx. quinquefasciatus	Ivanhoe	34	GRVD	7/31/19	WNV
Tulare	DLTA8507	2384	Cx. quinquefasciatus	Visalia	13	GRVD	8/1/19	WNV
Tulare	DLTA8512	2320	Cx. quinquefasciatus	Ivanhoe	10	GRVD	7/30/19	WNV
Tulare	DLTA8519	2242	Cx. quinquefasciatus	Visalia	13	GRVD	7/26/19	WNV
Tulare	DLTA8519	2360	Cx. quinquefasciatus	Visalia	12	GRVD	7/31/19	WNV
Tulare	DLTA8520	2244	Cx. quinquefasciatus	Visalia	22	GRVD	7/26/19	WNV
Tulare	DLTA8520	2336	Cx. quinquefasciatus	Visalia	10	BGSENT	7/30/19	WNV
Tulare	DLTA8521	2367	Cx. quinquefasciatus	Visalia	42	GRVD	7/31/19	WNV
Tulare	DLTA8527	2246	Cx. quinquefasciatus	Visalia	12	GRVD	7/26/19	SLEV
Tulare	DLTA8529	2333	Cx. quinquefasciatus	Visalia	30	GRVD	7/30/19	WNV
Tulare	DLTA8530	2321	Cx. quinquefasciatus	Visalia	21	GRVD	7/30/19	WNV
Tulare	DLTA8531	2285	Cx. quinquefasciatus	Visalia	40	GRVD	7/26/19	WNV
Tulare	DLTA8532	2284	Cx. quinquefasciatus	Visalia	37	GRVD	7/26/19	WNV
Tulare	DLTA8533	2281	Cx. quinquefasciatus	Visalia	31	GRVD	7/26/19	WNV
Tulare	DLTA8705	2375	Cx. tarsalis	Woodlake	11	CO2	8/1/19	WNV
Tulare	DLTA8705	2376	Cx. erythrothorax	Woodlake	28	CO2	8/1/19	WNV
Tulare	DLTA9401	2283	Cx. quinquefasciatus	Visalia	32	GRVD	7/26/19	WNV
Tulare	DLTA9402	2254	Cx. quinquefasciatus	Visalia	21	BGSENT	7/26/19	WNV
Tulare	DLTA9403	2271	Cx. quinquefasciatus	Visalia	50	GRVD	7/26/19	WNV
Tulare	DLTA9403	2272	Cx. quinquefasciatus	Visalia	50	GRVD	7/26/19	SLEV
Tulare	DLTA9403	2272	Cx. quinquefasciatus	Visalia	50	GRVD	7/26/19	WNV
Tulare	DLTA9403	2273	Cx. quinquefasciatus	Visalia	48	GRVD	7/26/19	SLEV
Tulare	DLTA9403	2273	Cx. quinquefasciatus	Visalia	48	GRVD	7/26/19	WNV
Tulare	DLTA9403	2370	Cx. quinquefasciatus	Visalia	21	BGSENT	7/31/19	WNV
Tulare	DLTA9501	2234	Cx. quinquefasciatus	Farmersville	14	GRVD	7/26/19	WNV
Tulare	DLTA9504	2248	Cx. quinquefasciatus	Visalia	27	BGSENT	7/26/19	WNV
Tulare	DLTA9504	2286	Cx. quinquefasciatus	Visalia	50	GRVD	7/26/19	SLEV
Tulare	DLTA9504	2286	Cx. quinquefasciatus	Visalia	50	GRVD	7/26/19	WNV
Tulare	DLTA9504	2287	Cx. quinquefasciatus	Visalia	50	GRVD	7/26/19	WNV
Tulare	DLTA9504	2288	Cx. quinquefasciatus	Visalia	26	GRVD	7/26/19	WNV
Tulare	DLTA9505	2251	Cx. quinquefasciatus	Visalia	32	BGSENT	7/26/19	WNV
Tulare	DLTA9505	2380	Cx. quinquefasciatus	Visalia	20	GRVD	8/1/19	WNV
Tulare	DLTA9511	2239	Cx. quinquefasciatus	Famersville	50	GRVD	7/26/19	SLEV
Tulare	DLTA9511	2239	Cx. quinquefasciatus	Famersville	50	GRVD	7/26/19	WNV
Tulare	DLTA9511	2240	Cx. quinquefasciatus	Famersville	34	GRVD	7/26/19	WNV
Tulare	DLTA9512	2361	Cx. quinquefasciatus	Farmersville	38	GRVD	7/31/19	WNV
Tulare	DLTA9603	2317	Cx. quinquefasciatus	Exeter	50	GRVD	7/30/19	WNV
Tulare	DLTA9604	2358	Cx. quinquefasciatus	Exeter	40	GRVD	7/31/19	WNV
Tulare	DLTA9606	2315	Cx. quinquefasciatus	Farmersville	35	GRVD	7/30/19	WNV
Tulare	DLTA9610	2247	Cx. quinquefasciatus	Exeter	12	GRVD	7/26/19	WNV
Yuba	SUYA10	263	Cx. pipiens	Olivehurst	27	REST	7/29/19	WNV
Yuba	SUYA10	279	Cx. tarsalis	Olivehurst	37	CO2	7/30/19	WNV
Yuba	SUYA37	278	Cx. tarsalis	Marysville	38	CO2	7/30/19	WNV

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Los Angeles	LACW1010	Los Angeles	7/25/2019	WNV	1641	1642	1644

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.

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/arbonet/maps/ADB_Diseases_Map/index.html