

## California Arbovirus Surveillance Bulletin #19

Week 32 Friday, August 10, 2018



### Weekly Update

#### **Humans**

A total of 7 new human cases of West Nile virus (WNV) illness were reported this week from 5 counties: Los Angeles (2), San Joaquin (2), Stanislaus (1), Tuolumne (1), and Ventura (1). **This is the first WNV human case reported from the Stanislaus County, and the first indication of WNV activity in Tuolumne and Ventura counties this year.** In 2018, a total of 19 human West Nile virus (WNV) cases have been reported from 11 counties. Of the 19 case patients, 12 (63%) had neuroinvasive illness; no fatalities have been reported. The median age of the individuals is 57 years (range: 14–90 years) and 14 (74%) are male. Dates of symptom onset ranged from May 6 – July 20. In addition to the 19 cases, 7 asymptomatic infections have been reported from Fresno (1), Los Angeles (2), Stanislaus (3), and Yolo (1) counties. At this time last year, 22 human WNV cases had been reported from 4 counties.

#### **Dead Birds**

A total of 57 WNV positive dead birds were reported this week from 8 counties: Contra Costa (2), Los Angeles (1), Orange (1), Placer (5), Sacramento (39), San Joaquin (2), Santa Clara (1), and Yolo (6). **This is the first WNV positive dead bird reported from Orange County this year.** In 2018, a total of 284 WNV positive dead birds have been reported from 17 counties. At this time last year, 171 WNV positive dead birds had been reported from 26 counties.

#### **Mosquito Pools**

##### West Nile virus

A total of 268 WNV positive mosquito pools were reported this week from 23 counties: Butte (16), Contra Costa (2), Fresno (10), Glenn (1), Imperial (1), Kern (4), Kings (7), Lake (1), Los Angeles (10), Madera (5), Merced (1), Orange (7), Placer (39), Sacramento (50), San Bernardino (1), San Diego (1), San Joaquin (72), Santa Clara (2), Stanislaus (9), Sutter (3), Tulare (4), Yolo (18), and Yuba (4). **This is the first detection of WNV activity in Glenn and Imperial counties this year.** In 2018, 942 mosquito pools have tested positive for WNV from 26 counties. At this time last year, 1,814 WNV positive mosquito pools had been reported from 24 counties.

##### St. Louis encephalitis virus

A total of 16 mosquito pools were reported positive for St. Louis encephalitis virus (SLEV) this week from 6 counties: Fresno (3), Imperial (2), Kern (4), Kings (2), Los Angeles (1), and Tulare (4). **This is the first detection of SLEV activity in Imperial and Los Angeles counties this year.** In 2018, 177 SLEV positive mosquito pools have been reported from 7 counties: Fresno (26), Imperial (2), Kern (44), Kings (7), Los Angeles (1), Riverside (20), and Tulare (77). At this time last year, 30 SLEV positive mosquito pools had been reported from 8 counties.

#### **Sentinel Chickens**

A total of 24 WNV seroconversions were reported this week from 4 counties: Butte (11), Merced (7), San Benito (1), and Sutter (5). **This is the first detection of WNV activity in San Benito County, and the first WNV positive chickens reported from Butte, Merced and Sutter counties this year.** In 2018, 38 WNV positive chickens have been reported from 8 counties. At this time last year, 58 WNV positive chickens had been reported from 5 counties.

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<b>2017 &amp; 2018 YTD West Nile Virus Comparisons</b>		
	<b>2017</b>	<b>2018</b>
Total # Dead Bird Reports	4,838	5,117
# Positive Counties	31	33
# Human Cases	22	19
# Positive Dead Birds / # Tested	171 / 1,234	284 / 1,328
# Positive Mosquito Pools / # Tested	1,814 / 27,266	942 / 25,621
# Seroconversions / # Tested	58 / 6,805	38 / 5,826

<b>YTD WNV Activity by Element and County, 2018</b>				
County	Humans	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda		10	9	
Butte	1	1	34	11
Contra Costa		3	5	10
El Dorado		2		
Fresno	2		36	
Glenn			1	
Humboldt		1		
Imperial			1	
Kern	2		15	
Kings			9	
Lake			2	
Los Angeles	4	4	13	1
Madera			12	
Merced			5	7
Orange		1	11	
Placer		14	177	1
Riverside	2	3	18	
Sacramento	1	181	232	
San Bernardino	1		5	
San Benito				1
San Diego			2	
San Joaquin	3	7	244	
San Mateo		2		
Santa Clara		30	4	2
Santa Cruz		2		
Shasta			3	
Stanislaus	1	1	26	
Sutter		3	19	5
Tuolumne	1			
Tulare			13	
Ventura	1			
Yolo		19	40	
Yuba			6	
<b>Totals</b>	<b>19</b>	<b>284</b>	<b>942</b>	<b>38</b>

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## TESTING SUMMARIES

### Humans

		WNV	SLE	WEE
Human Cases	Week	7	0	0
	YTD	19	0	0

### Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	128	57
	YTD	1,328	284

### Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	309	24	0	0
	YTD	5,826	38	0	0

### Mosquitoes

		Positive / Total Tested					
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA
		268 / 2,336	16 / 1,839	0 / 1,707	0 / 124	0 / 124	0 / 124
		942 / 25,621	177 / 20,046	0 / 18,277	0 / 785	0 / 785	0 / 785

## New Positives

### Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Contra Costa	Contra Costa MVCD	Discovery Bay	94505	California Scrub-Jay	8/5/2018	WNV
Contra Costa	Contra Costa MVCD	Discovery Bay	94505	California Scrub-Jay	8/9/2018	WNV
Los Angeles	Los Angeles Co West VCD	Beverly Hills	90211	American Crow	8/7/2018	WNV
Orange	Orange Co VCD	Anaheim	92802	American Crow	7/24/2018	WNV
Placer	Placer MVCD	Elverta	95626	Yellow-billed Magpie	8/2/2018	WNV
Placer	Placer MVCD	Newcastle	95658	California Scrub-Jay	8/5/2018	WNV
Placer	Placer MVCD	Rocklin	95677	California Scrub-Jay	8/7/2018	WNV
Placer	Placer MVCD	Roseville	95678	Lesser Goldfinch	8/3/2018	WNV
Placer	Placer MVCD	Roseville	95747	Purple Finch	8/6/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Robin	8/3/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Citrus Heights	95610	Northern Mockingbird	8/4/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Citrus Heights	95621	California Scrub-Jay	8/6/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	7/31/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	7/31/2018	WNV

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Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	8/3/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	California Scrub-Jay	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	Northern Mockingbird	8/3/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95758	American Crow	8/5/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Elverta	95626	California Scrub-Jay	8/1/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Orangevale	95662	California Scrub-Jay	7/31/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Orangevale	95662	Yellow-billed Magpie	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	American Crow	8/4/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	House Sparrow	8/6/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95819	California Scrub-Jay	8/1/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	American Crow	8/5/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Oak Titmouse	8/1/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	American Robin	8/3/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	House Finch	7/29/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95823	California Scrub-Jay	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95825	American Crow	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95826	California Scrub-Jay	8/4/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95828	Lesser Goldfinch	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	American Crow	8/4/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	Bushtit	8/3/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	House Wren	8/7/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95833	American Crow	8/6/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95835	American Crow	7/31/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95835	American Crow	8/6/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95835	California Scrub-Jay	8/5/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95835	California Scrub-Jay	8/6/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95835	Northern Mockingbird	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95841	American Crow	8/2/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95864	California Scrub-Jay	8/3/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95864	California Scrub-Jay	8/5/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95864	California Scrub-Jay	8/5/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	7/31/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	California Scrub-Jay	7/31/2018	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	California Scrub-Jay	8/5/2018	WNV
San Joaquin	San Joaquin Co MVCD	Stockton	95207	California Scrub-Jay	8/3/2018	WNV
San Joaquin	San Joaquin Co MVCD	Tracy	95376	American Crow	8/3/2018	WNV
Santa Clara	Santa Clara Co VCD	Sunnyvale	94087	American Crow	8/3/2018	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95616	American Crow	8/1/2018	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95618	American Crow	8/2/2018	WNV
Yolo	Sacramento-Yolo MVCD	Woodland	95695	House Finch	8/3/2018	WNV
Yolo	Sacramento-Yolo MVCD	Woodland	95695	Unknown - songbird	8/9/2018	WNV
Yolo	Sacramento-Yolo MVCD	Woodland	95776	American Crow	8/5/2018	WNV
Yolo	Sacramento-Yolo MVCD	Woodland	95776	California Scrub-Jay	8/7/2018	WNV

### Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO11	268	Cx. tarsalis	Oroville	50	CO2	8/6/18	WNV
Butte	BUCO11	270	Cx. tarsalis	Oroville	50	CO2	8/6/18	WNV
Butte	BUCO114	247	Cx. tarsalis	Oroville	50	CO2	7/30/18	WNV
Butte	BUCO114	249	Cx. tarsalis	Oroville	50	CO2	7/30/18	WNV
Butte	BUCO146	271	Cx. tarsalis	Palermo	50	CO2	8/6/18	WNV
Butte	BUCO146	273	Cx. tarsalis	Palermo	50	CO2	8/6/18	WNV
Butte	BUCO167	257	Cx. tarsalis	Gridley	50	CO2	8/1/18	WNV
Butte	BUCO167	258	Cx. tarsalis	Gridley	50	CO2	8/1/18	WNV

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Butte	BUCO167	259	Cx. tarsalis	Gridley	50	CO2	8/1/18	WNV
Butte	BUCO28	253	Cx. tarsalis	Biggs	50	CO2	8/1/18	WNV
Butte	BUCO28	254	Cx. tarsalis	Biggs	50	CO2	8/1/18	WNV
Butte	BUCO30	277	Cx. tarsalis	Chico	50	CO2	8/6/18	WNV
Butte	BUCO34	242	Cx. tarsalis	Richvale	50	CO2	7/30/18	WNV
Butte	BUCO34	243	Cx. tarsalis	Richvale	50	CO2	7/30/18	WNV
Butte	BUCO69	250	Cx. tarsalis	Oroville	50	CO2	7/31/18	WNV
Butte	BUCO69	252	Cx. pipiens	Oroville	35	CO2	7/31/18	WNV
Contra Costa	CNTR4835	233	Cx. tarsalis	Oakley	20	CO2	8/1/18	WNV
Contra Costa	CNTR7465	252	Cx. pipiens	Discovery Bay	10	CO2	8/8/18	WNV
Fresno	CNSL1108	248	Cx. quinquefasciatus	Clovis	31	GRVD	8/3/18	WNV
Fresno	CNSL1110	249	Cx. quinquefasciatus	Pinedale	28	GRVD	8/3/18	WNV
Fresno	CNSL1766	219	Cx. quinquefasciatus	Fresno	47	GRVD	7/31/18	WNV
Fresno	CNSL3352	232	Cx. quinquefasciatus	Parlier	50	GRVD	8/2/18	SLEV
Fresno	CNSL5089	240	Cx. quinquefasciatus	Kingsburg	25	GRVD	8/2/18	WNV
Fresno	FRNO163	460	Cx. quinquefasciatus		25	GRVD	8/7/18	SLEV
Fresno	FRNO229	473	Cx. quinquefasciatus	Fresno	43	GRVD	8/8/18	SLEV
Fresno	FRNO229	473	Cx. quinquefasciatus	Fresno	43	GRVD	8/8/18	WNV
Fresno	FRNO235	459	Cx. quinquefasciatus	Fresno	12	GRVD	8/7/18	WNV
Fresno	FRNO31	468	Cx. quinquefasciatus	Fresno	40	GRVD	8/8/18	WNV
Fresno	FRWS100006	212	Cx. tarsalis	Dos Palos	50	CO2	8/8/18	WNV
Fresno	FRWS2105	204	Cx. tarsalis	Dos Palos	50	CO2	8/8/18	WNV
Fresno	FRWS2105	205	Cx. tarsalis	Dos Palos	50	CO2	8/8/18	WNV
Glenn	BUCO47	261	Cx. tarsalis	Hamilton City	50	CO2	8/1/18	WNV
Imperial	IMPR40	147	Cx. quinquefasciatus	Imperial	41	BGSENT	7/25/18	SLEV
Imperial	IMPR40	147	Cx. quinquefasciatus	Imperial	41	BGSENT	7/25/18	WNV
Imperial	IMPR40	165	Cx. quinquefasciatus	Imperial	45	BGSENT	7/20/18	SLEV
Kern	DLNO20	155	Cx. quinquefasciatus	Delano	26	GRVD	8/3/18	WNV
Kern	DLNO80	149	Cx. quinquefasciatus	Delano	49	CO2	8/2/18	WNV
Kern	KERN1005	372	Cx. quinquefasciatus	Bakersfield	28	GRVD	7/31/18	WNV
Kern	KERN117	393	Cx. quinquefasciatus	Bakersfield	50	CO2	8/3/18	SLEV
Kern	KERN12	385	Cx. quinquefasciatus	Bakersfield	37	GRVD	8/3/18	SLEV
Kern	WEST6205	65	Cx. tarsalis	Buttonwillow	20	CO2	8/8/18	SLEV
Kern	WEST6277	64	Cx. tarsalis	Buttonwillow	40	CO2	8/8/18	WNV
Kern	WEST6282	68	Cx. tarsalis	Taft	45	CO2	8/8/18	SLEV
Kings	KNGS3102	103	Cx. tarsalis	Armona	50	CO2	7/31/18	WNV
Kings	KNGS3102	104	Cx. tarsalis	Armona	25	CO2	7/31/18	SLEV
Kings	KNGS3102	105	Cx. pipiens	Armona	22	CO2	7/31/18	WNV
Kings	KNGS3110	111	Cx. tarsalis	Guernsey	50	CO2	8/2/18	WNV
Kings	KNGS3110	112	Cx. tarsalis	Guernsey	50	CO2	8/2/18	WNV
Kings	KNGS3110	113	Cx. tarsalis	Guernsey	46	CO2	8/2/18	SLEV
Kings	KNGS3110	114	Cx. pipiens	Guernsey	29	CO2	8/2/18	WNV
Kings	KNGS4447	117	Cx. pipiens		41	BGSENT	8/3/18	WNV
Kings	KNGS5519	101	Cx. pipiens	Hanford	26	BGSENT	7/31/18	WNV
Lake	LAKE305	366	Cx. tarsalis	Middletown	45	CO2	8/7/18	WNV
Los Angeles	GRLA2032	5639	Cx. quinquefasciatus	Northridge	50	GRVD	7/31/18	WNV
Los Angeles	GRLA2416	5665	Cx. quinquefasciatus	Panorama City	49	GRVD	8/3/18	WNV
Los Angeles	GRLA2421	5667	Cx. quinquefasciatus	Panorama City	50	GRVD	8/3/18	WNV
Los Angeles	GRLA2540	5642	Cx. quinquefasciatus	Porter Ranch	50	GRVD	7/31/18	WNV
Los Angeles	GRLA2555	5634	Cx. quinquefasciatus	Encino	39	GRVD	7/31/18	WNV
Los Angeles	GRLA2580	5659	Cx. quinquefasciatus	Sherman Oaks	50	GRVD	8/3/18	WNV
Los Angeles	GRLA2635	5633	Cx. quinquefasciatus	Van Nuys	50	GRVD	7/31/18	WNV
Los Angeles	GRLA2637	5664	Cx. quinquefasciatus	Van Nuys	50	GRVD	8/3/18	WNV
Los Angeles	GRLA2650	5663	Cx. quinquefasciatus	Encino	38	GRVD	8/3/18	WNV

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Los Angeles	GRLA2655	5662	Cx. quinquefasciatus	Encino	50	GRVD	8/3/18	WNV
Los Angeles	LACW1079	164	Cx. erythrothorax	Playa Vista	50	CO2	8/1/18	SLEV
Madera	MADR12	121	Cx. tarsalis	Madera	18	CO2	8/1/18	WNV
Madera	MADR195	124	Cx. quinquefasciatus	Madera	20	CO2	8/1/18	WNV
Madera	MADR3334	113	Cx. quinquefasciatus	Madera	50	CO2	7/31/18	WNV
Madera	MADR3334	115	Cx. quinquefasciatus	Madera	50	CO2	7/31/18	WNV
Madera	MADR3334	116	Cx. quinquefasciatus	Madera	50	CO2	7/31/18	WNV
Merced	MERC102	262	Cx. pipiens	Merced	13	CO2	8/8/18	WNV
Orange	ORCO1009	2910	Cx. quinquefasciatus	Garden Grove	38	GRVD	8/8/18	WNV
Orange	ORCO1040	2883	Cx. quinquefasciatus	Orange	50	GRVD	8/7/18	WNV
Orange	ORCO2	2988	Cx. quinquefasciatus	Fullerton	50	GRVD	8/8/18	WNV
Orange	ORCO202	2975	Cx. quinquefasciatus	Fullerton	47	GRVD	8/8/18	WNV
Orange	ORCO245	2970	Cx. quinquefasciatus	Santa Ana	50	GRVD	8/8/18	WNV
Orange	ORCO3	2931	Cx. quinquefasciatus	Garden Grove	50	GRVD	8/8/18	WNV
Orange	ORCO50	2992	Cx. quinquefasciatus	Buena Park	34	GRVD	8/8/18	WNV
Placer	PLCR1023	1324	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR1023	1325	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR1023	1327	Cx. stigmatosoma	Roseville	3	CO2	8/6/18	WNV
Placer	PLCR1113	1409	Cx. tarsalis	Pleasant Grove	50	CO2	8/7/18	WNV
Placer	PLCR1113	1412	Cx. tarsalis	Pleasant Grove	39	CO2	8/7/18	WNV
Placer	PLCR1114	1393	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR1114	1394	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR1114	1395	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR1114	1396	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR1114	1398	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR139	1346	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR139	1348	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR139	1349	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR191218	1375	Cx. tarsalis		50	CO2	8/6/18	WNV
Placer	PLCR191218	1377	Cx. tarsalis		50	CO2	8/6/18	WNV
Placer	PLCR191218	1382	Cx. tarsalis		50	CO2	8/6/18	WNV
Placer	PLCR191373	1428	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR191373	1429	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR191373	1430	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR191373	1432	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR191998	1355	Cx. tarsalis	Lincoln	50	CO2	8/6/18	WNV
Placer	PLCR194232	1402	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR194232	1405	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR194232	1406	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR194232	1407	Cx. tarsalis		50	CO2	8/7/18	WNV
Placer	PLCR197780	1481	Cx. pipiens		8	CO2	8/8/18	WNV
Placer	PLCR25	1414	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR25	1415	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR25	1416	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR25	1417	Cx. tarsalis	Lincoln	50	CO2	8/7/18	WNV
Placer	PLCR30	1477	Cx. tarsalis	Lincoln	42	CO2	8/8/18	WNV
Placer	PLCR411	1331	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR411	1333	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR411	1334	Cx. tarsalis	Roseville	44	CO2	8/6/18	WNV
Placer	PLCR516	1318	Cx. tarsalis	Roseville	50	CO2	8/6/18	WNV
Placer	PLCR516	1319	Cx. tarsalis	Roseville	18	CO2	8/6/18	WNV
Placer	PLCR525	1360	Cx. pipiens	Lincoln	50	CO2	8/6/18	WNV
Placer	PLCR668	1423	Cx. tarsalis	Elverta	50	CO2	8/7/18	WNV
Placer	PLCR668	1424	Cx. tarsalis	Elverta	50	CO2	8/7/18	WNV

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Sacramento	SAYO201006	4499	Cx. tarsalis	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO202006	4467	Cx. tarsalis	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO202006	4470	Cx. tarsalis	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO203006	4465	Cx. pipiens	Elverta	3	GRVD	8/7/18	WNV
Sacramento	SAYO203031	4588	Cx. pipiens	Antelope	5	GRVD	8/9/18	WNV
Sacramento	SAYO203032	4607	Cx. tarsalis	Sacramento	30	CO2	8/9/18	WNV
Sacramento	SAYO203035	4152	Cx. pipiens	North Highlands	4	GRVD	8/3/18	WNV
Sacramento	SAYO203039	4157	Cx. pipiens	North Highlands	16	GRVD	8/3/18	WNV
Sacramento	SAYO203041	4170	Cx. tarsalis	Sacramento	1	GRVD	8/3/18	WNV
Sacramento	SAYO203041	4172	Cx. pipiens	Sacramento	23	GRVD	8/3/18	WNV
Sacramento	SAYO203041	4554	Cx. pipiens	Sacramento	11	CO2	8/9/18	WNV
Sacramento	SAYO203041	4555	Cx. pipiens	Sacramento	17	GRVD	8/9/18	WNV
Sacramento	SAYO204007	4166	Cx. tarsalis	Antelope	1	GRVD	8/3/18	WNV
Sacramento	SAYO204007	4594	Cx. tarsalis	Antelope	25	CO2	8/9/18	WNV
Sacramento	SAYO204009	4125	Cx. pipiens	Citrus Heights	7	CO2	8/3/18	WNV
Sacramento	SAYO204009	4536	Cx. pipiens	Citrus Heights	50	GRVD	8/9/18	WNV
Sacramento	SAYO204025	4142	Cx. pipiens	Citrus Heights	48	GRVD	8/3/18	WNV
Sacramento	SAYO204025	4558	Cx. pipiens	Citrus Heights	50	GRVD	8/9/18	WNV
Sacramento	SAYO204036	4148	Cx. pipiens	Sacramento	41	GRVD	8/3/18	WNV
Sacramento	SAYO204036	4574	Cx. tarsalis	Sacramento	2	GRVD	8/9/18	WNV
Sacramento	SAYO204037	4546	Cx. pipiens	Citrus Heights	18	GRVD	8/9/18	WNV
Sacramento	SAYO204052	4137	Cx. pipiens	Carmichael	14	GRVD	8/3/18	WNV
Sacramento	SAYO205010	4139	Cx. pipiens	Orangevale	33	GRVD	8/3/18	WNV
Sacramento	SAYO205033	4562	Cx. pipiens	Orangevale	14	GRVD	8/9/18	WNV
Sacramento	SAYO212033	4477	Cx. tarsalis	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO212033	4479	Cx. tarsalis	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO212033	4481	Cx. pipiens	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO212033	4484	Cx. pipiens	Sacramento	50	CO2	8/7/18	WNV
Sacramento	SAYO212033	4485	Cx. pipiens	Sacramento	47	CO2	8/7/18	WNV
Sacramento	SAYO212033	4486	Cx. pipiens	Sacramento	50	GRVD	8/7/18	WNV
Sacramento	SAYO214011	4146	Cx. pipiens	Fair Oaks	24	GRVD	8/3/18	WNV
Sacramento	SAYO214031	4135	Cx. pipiens	Fair Oaks	25	GRVD	8/3/18	WNV
Sacramento	SAYO222010	4393	Cx. tarsalis	Sacramento	16	CO2	8/7/18	WNV
Sacramento	SAYO222011	4350	Cx. pipiens	Sacramento	27	GRVD	8/7/18	WNV
Sacramento	SAYO223006	4332	Cx. tarsalis	South Watt Avenue	30	CO2	8/7/18	WNV
Sacramento	SAYO223006	4333	Cx. pipiens	South Watt Avenue	9	CO2	8/7/18	WNV
Sacramento	SAYO223006	4334	Cx. pipiens	South Watt Avenue	24	GRVD	8/7/18	WNV
Sacramento	SAYO232012	4351	Cx. tarsalis	Elk Grove	50	CO2	8/7/18	WNV
Sacramento	SAYO233001	4359	Cx. tarsalis	Elk Grove	50	CO2	8/7/18	WNV
Sacramento	SAYO233001	4360	Cx. tarsalis	Elk Grove	47	CO2	8/7/18	WNV
Sacramento	SAYO233015	4357	Cx. pipiens	Sacramento	3	CO2	8/7/18	WNV
Sacramento	SAYO233015	4358	Cx. pipiens	Sacramento	22	GRVD	8/7/18	WNV
Sacramento	SAYO233093	4349	Cx. pipiens	Elk Grove	6	GRVD	8/7/18	WNV
Sacramento	SAYO235001	4292	Cx. tarsalis	Wilton	10	CO2	8/3/18	WNV
Sacramento	SAYO242004	4235	Cx. pipiens	Elk Grove	50	CO2	8/3/18	WNV
Sacramento	SAYO243017	4224	Cx. tarsalis	Elk Grove	29	CO2	8/3/18	WNV
Sacramento	SAYO243026	4217	Cx. pipiens	Elk Grove	48	GRVD	8/3/18	WNV
Sacramento	SAYO243042	4275	Cx. pipiens	Elk Grove,	50	CO2	8/3/18	WNV
Sacramento	SAYO245002	4284	Cx. pipiens	Wilton	4	GRVD	8/3/18	WNV
Sacramento	SAYO271007	4322	Cx. tarsalis	Isleton	50	CO2	8/2/18	WNV
San Bernardino	WVAL3859	1205	Cx. quinquefasciatus	Ontario	55	BGSENT	8/9/18	WNV
San Diego	SAND14036	2109	Cx. quinquefasciatus	Santee	25	GRVD	7/25/18	WNV
San Joaquin	SJCM8004	1674	Cx. tarsalis	Lodi	11	CO2	8/7/18	WNV
San Joaquin	SJCM8010	1667	Cx. tarsalis	Ripon	50	CO2	8/7/18	WNV

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San Joaquin	SJCM8010	1668	Cx. tarsalis	Ripon	27	CO2	8/7/18	WNV
San Joaquin	SJCM8010	1669	Cx. pipiens	Ripon	43	CO2	8/7/18	WNV
San Joaquin	SJCM8018	1614	Cx. tarsalis	Stockton	50	CO2	8/7/18	WNV
San Joaquin	SJCM8022	1652	Cx. tarsalis	Holt	50	CO2	8/7/18	WNV
San Joaquin	SJCM8022	1654	Cx. tarsalis	Holt	41	CO2	8/7/18	WNV
San Joaquin	SJCM8027	1633	Cx. tarsalis	Stockton	49	CO2	8/7/18	WNV
San Joaquin	SJCM8029	1731	Cx. tarsalis	Farmington	30	CO2	8/9/18	WNV
San Joaquin	SJCM8041	1692	Cx. tarsalis	Lodi	46	CO2	8/7/18	WNV
San Joaquin	SJCM8041	1693	Cx. pipiens	Lodi	26	CO2	8/7/18	WNV
San Joaquin	SJCM8047	1726	Cx. pipiens	Stockton	10	CO2	8/9/18	WNV
San Joaquin	SJCM8049	1612	Cx. tarsalis	Stockton	19	CO2	8/7/18	WNV
San Joaquin	SJCM8056	1672	Cx. tarsalis	Manteca	17	CO2	8/7/18	WNV
San Joaquin	SJCM8056	1673	Cx. pipiens	Manteca	33	CO2	8/7/18	WNV
San Joaquin	SJCM8070	1737	Cx. tarsalis	Galt	24	CO2	8/9/18	WNV
San Joaquin	SJCM8070	1738	Cx. pipiens	Galt	7	CO2	8/9/18	WNV
San Joaquin	SJCM8077	1670	Cx. tarsalis	Stockton	27	CO2	8/7/18	WNV
San Joaquin	SJCM8084	1699	Cx. tarsalis	Stockton	7	CO2	8/7/18	WNV
San Joaquin	SJCM8094	1694	Cx. tarsalis	Manteca	17	CO2	8/7/18	WNV
San Joaquin	SJCM8094	1695	Cx. pipiens	Manteca	5	CO2	8/7/18	WNV
San Joaquin	SJCM8097	1696	Cx. tarsalis	Banta	49	CO2	8/7/18	WNV
San Joaquin	SJCM8097	1697	Cx. pipiens	Banta	8	CO2	8/7/18	WNV
San Joaquin	SJCM8100	1615	Cx. tarsalis	Tracy	27	CO2	8/7/18	WNV
San Joaquin	SJCM8111	1617	Cx. tarsalis	Stockton	50	CO2	8/7/18	WNV
San Joaquin	SJCM8111	1618	Cx. tarsalis	Stockton	13	CO2	8/7/18	WNV
San Joaquin	SJCM8143	1682	Cx. tarsalis	Stockton	50	CO2	8/7/18	WNV
San Joaquin	SJCM8143	1683	Cx. tarsalis	Stockton	50	CO2	8/7/18	WNV
San Joaquin	SJCM8143	1684	Cx. tarsalis	Stockton	50	CO2	8/7/18	WNV
San Joaquin	SJCM8143	1685	Cx. tarsalis	Stockton	31	CO2	8/7/18	WNV
San Joaquin	SJCM8154	1691	Cx. tarsalis	Lathrop	50	CO2	8/7/18	WNV
San Joaquin	SJCM8160	1687	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8160	1688	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8160	1689	Cx. tarsalis	Lodi	46	CO2	8/7/18	WNV
San Joaquin	SJCM8161	1645	Cx. tarsalis	Ripon	39	CO2	8/7/18	WNV
San Joaquin	SJCM8161	1646	Cx. pipiens	Ripon	39	CO2	8/7/18	WNV
San Joaquin	SJCM8191	1679	Cx. tarsalis	Lodi	46	CO2	8/7/18	WNV
San Joaquin	SJCM8199	1657	Cx. tarsalis	Manteca	50	CO2	8/7/18	WNV
San Joaquin	SJCM8199	1658	Cx. tarsalis	Manteca	50	CO2	8/7/18	WNV
San Joaquin	SJCM8199	1659	Cx. tarsalis	Manteca	41	CO2	8/7/18	WNV
San Joaquin	SJCM8199	1660	Cx. pipiens	Manteca	50	CO2	8/7/18	WNV
San Joaquin	SJCM8199	1661	Cx. pipiens	Manteca	24	CO2	8/7/18	WNV
San Joaquin	SJCM8203	1647	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8203	1648	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8203	1649	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8203	1650	Cx. tarsalis	Lodi	38	CO2	8/7/18	WNV
San Joaquin	SJCM8204	1665	Cx. tarsalis	Stockton	50	CO2	8/7/18	WNV
San Joaquin	SJCM8204	1666	Cx. tarsalis	Stockton	49	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1636	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1637	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1638	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1639	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1640	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1641	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1643	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8206	1644	Cx. pipiens	Lodi	44	CO2	8/7/18	WNV



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San Joaquin	SJCM8208	1706	Cx. tarsalis	Lodi	50	CO2	8/9/18	WNV
San Joaquin	SJCM8208	1707	Cx. tarsalis	Lodi	29	CO2	8/9/18	WNV
San Joaquin	SJCM8210	1727	Cx. tarsalis	Escalon	7	CO2	8/9/18	WNV
San Joaquin	SJCM8210	1728	Cx. pipiens	Escalon	30	CO2	8/9/18	WNV
San Joaquin	SJCM8213	1621	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1622	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1623	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1624	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1625	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1626	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1628	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1629	Cx. tarsalis	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1630	Cx. tarsalis	Lodi	22	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1631	Cx. pipiens	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM8213	1632	Cx. pipiens	Lodi	50	CO2	8/7/18	WNV
San Joaquin	SJCM9906	1664	Cx. tarsalis	French Camp	39	CO2	8/7/18	WNV
Santa Clara	STCL1676	1166	Cx. tarsalis	Santa Clara	9	CO2	8/7/18	WNV
Santa Clara	STCL1681	1185	Cx. tarsalis	Santa Clara	8	CO2	8/7/18	WNV
Stanislaus	TRLK1303	889	Cx. tarsalis	Patterson	28	CO2	8/2/18	WNV
Stanislaus	TRLK1509	919	Cx. pipiens	Turlock	24	CO2	8/7/18	WNV
Stanislaus	TRLK1615	901	Cx. tarsalis	Modesto	50	CO2	8/7/18	WNV
Stanislaus	TRLK1615	903	Cx. tarsalis	Modesto	49	CO2	8/7/18	WNV
Stanislaus	TRLK1615	904	Cx. pipiens	Modesto	20	CO2	8/7/18	WNV
Stanislaus	TRLK2	939	Cx. tarsalis	Vernalis	50	CO2	8/7/18	WNV
Stanislaus	TRLK319	892	Cx. tarsalis	Newman	50	CO2	8/2/18	WNV
Stanislaus	TRLK319	893	Cx. tarsalis	Newman	50	CO2	8/2/18	WNV
Stanislaus	TRLK424	906	Cx. tarsalis	Patterson	33	CO2	8/7/18	WNV
Sutter	SUYA44	275	Cx. tarsalis	Pleasant Grove	50	CO2	8/7/18	WNV
Sutter	SUYA44	276	Cx. tarsalis	Pleasant Grove	50	CO2	8/7/18	WNV
Sutter	SUYA9	289	Cx. tarsalis	Sutter	24	CO2	8/8/18	WNV
Tulare	DLNO10	164	Cx. quinquefasciatus	Earlimart	50	GRVD	8/7/18	WNV
Tulare	DLTA9402	2641	Cx. quinquefasciatus	Visalia	18	GRVD	8/3/18	SLEV
Tulare	TLRE192436	110	Cx. quinquefasciatus	Tulare	50	GRVD	7/31/18	SLEV
Tulare	TLRE202401	112	Cx. quinquefasciatus	Tulare	39	GRVD	7/31/18	WNV
Tulare	TLRE202402	123	Cx. quinquefasciatus	Tulare	38	GRVD	8/3/18	SLEV
Tulare	TLRE202409	104	Cx. quinquefasciatus	Tulare	50	GRVD	7/31/18	WNV
Tulare	TLRE202518	116	Cx. quinquefasciatus	Tulare	40	GRVD	7/31/18	WNV
Tulare	TLRE202518	126	Cx. quinquefasciatus	Tulare	43	GRVD	8/3/18	SLEV
Yolo	SAYO103007	4517	Cx. tarsalis	Dunnigan	50	CO2	8/7/18	WNV
Yolo	SAYO103007	4519	Cx. tarsalis	Dunnigan	50	CO2	8/7/18	WNV
Yolo	SAYO103007	4520	Cx. tarsalis	Dunnigan	50	CO2	8/7/18	WNV
Yolo	SAYO104006	4505	Cx. tarsalis	Dunnigan	50	CO2	8/7/18	WNV
Yolo	SAYO114001	4508	Cx. tarsalis	Zamora	50	CO2	8/7/18	WNV
Yolo	SAYO116002	4493	Cx. tarsalis	Knights Landing	25	CO2	8/7/18	WNV
Yolo	SAYO125016	4182	Cx. tarsalis	Woodland	18	CO2	8/3/18	WNV
Yolo	SAYO135006	4195	Cx. tarsalis	Woodland	50	CO2	8/3/18	WNV
Yolo	SAYO136010	4205	Cx. tarsalis	Woodland	50	CO2	8/3/18	WNV
Yolo	SAYO145013	4407	Cx. tarsalis	Davis	19	CO2	8/7/18	WNV
Yolo	SAYO145016	4397	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV
Yolo	SAYO145016	4398	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV
Yolo	SAYO146002	4430	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV
Yolo	SAYO146006	4415	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV
Yolo	SAYO146017	4441	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV
Yolo	SAYO146017	4444	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV

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Yolo	SAYO146017	4445	Cx. tarsalis	Davis	50	CO2	8/7/18	WNV
Yolo	SAYO146017	4447	Cx. pipiens	Davis	6	CO2	8/7/18	WNV
Yuba	SUYA10	279	Cx. tarsalis	Olivehurst	50	CO2	8/7/18	WNV
Yuba	SUYA108	287	Cx. tarsalis	Plumas Lake	31	CO2	8/8/18	WNV
Yuba	SUYA108	288	Cx. tarsalis	Plumas Lake	31	CO2	8/8/18	WNV
Yuba	SUYA8	277	Cx. tarsalis	Marysville	41	CO2	8/7/18	WNV

### Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Butte	BUCO0001	Chico	7/31/2018	WNV	1504		
Butte	BUCO0002	Oroville	7/31/2018	WNV	1507		
Butte	BUCO0003	Oroville	7/31/2018	WNV	1514	1516	
Butte	BUCO0004	Gridley	7/31/2018	WNV	1522	1523	
Butte	BUCO0005	Honcut	7/31/2018	WNV	1526	1527	1529
Butte	BUCO0006	Chico	7/31/2018	WNV	1532	1533	
Merced	MERC0002	Dos Palos	8/3/2018	WNV	1808	1809	1811
Merced	MERC0006	Merced	8/3/2018	WNV	1819		
Merced	MERC0501	El Nido	8/3/2018	WNV	1825	1828	1829
San Benito	SBVC0100	Hollister	8/1/2018	WNV	1982		
Sutter	SUYA0030	Live Oak	8/2/2018	WNV	1369	1370	1372
Sutter	SUYA0084	Yuba City	8/2/2018	WNV	1326	1330	

## 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.

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*Website Information: For updated information on WNV and SLEV in California, please visit the California WNV website, [www.westnile.ca.gov](http://www.westnile.ca.gov), or the California Vectorborne Disease Surveillance System website, [www.calsurv.org](http://www.calsurv.org). For national information on WNV and other arboviruses, please visit the CDC websites: [www.cdc.gov](http://www.cdc.gov) and [https://wwwn.cdc.gov/arbovet/maps/ADB\\_Diseases\\_Map/index.html](https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html)*

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