

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020



Weekly Update

Humans

One human case of West Nile virus (WNV) illness was reported this week from Stanislaus County. In 2020, a total of five human WNV cases have been reported from three counties. Of the five cases, two (40%) had neuroinvasive illness; no fatalities have been reported. In addition to the five cases, two asymptomatic WNV-positive blood donors have been reported from Los Angeles (1) and Stanislaus (1) counties. At this time last year, four human WNV cases had been reported from four counties.

Dead Birds

A total of 18 WNV positive dead birds were reported this week from 7 counties: Los Angeles (2), Merced (1), Orange (3), Riverside (1), Sacramento (9), Solano (1), and Tulare (1). **This is the first detection of WNV in Solano County and the first positive birds from Riverside and Tulare counties this year.** In 2020, a total of 64 WNV positive dead birds have been reported from 12 counties. At this time last year, 43 WNV positive dead birds had been reported from 8 counties.

Mosquito Pools

West Nile virus

A total of 102 WNV positive mosquito pools were reported this week from 16 counties: Butte (7), Fresno (20), Kern (3), Lake (2), Los Angeles (6), Madera (4), Merced (8), Orange (6), Placer (3), Riverside (5), Sacramento (1), San Diego (1), San Joaquin (6), Stanislaus (20), Tulare (8), and Yolo (2). **These are the first WNV positive mosquitoes reported from Butte County this year.** In 2020, a total of 474 WNV positive mosquito pools have been reported from 21 counties. At this time last year, 1,371 WNV positive mosquito pools had been reported from 20 counties.

St. Louis encephalitis virus

A total of 32 St. Louis encephalitis virus (SLEV) positive mosquito pools were reported this week from 2 counties: Fresno (16) and Riverside (16). In 2020, a total of 143 SLEV positive mosquito pools have been reported from Fresno (44), Imperial (9), Kern (5), and Riverside (85) counties. At this time last year, 95 SLEV positive mosquito pools had been reported from 5 counties.

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

Sentinel Chickens

A total of two WNV positive chickens were reported this week from Los Angeles County; **these are the first WNV positive chickens reported from Los Angeles County this year.** In 2020, a total of 12 chickens have tested positive for WNV from 3 counties. At this time last year, three WNV positive chickens had been reported from one county.

2019 & 2020 YTD West Nile Virus Comparisons		
	2019	2020
Total # Dead Bird Reports	3,388	3,097
# Positive Counties	21	24
# Human Cases	4	5
# Positive Dead Birds / # Tested	43 / 1,019	64 / 793
# Positive Mosquito Pools / # Tested	1,371 / 23,159	474 / 19,940
# Seroconversions / # Tested	3 / 4,736	12 / 3,281

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

YTD WNV Activity by Element and County, 2020					
County	Humans*	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Amador		1			
Butte				7	2
Fresno			4	72	
Imperial				3	
Kern				10	
Kings				7	
Lake				3	
Los Angeles	1		8	47	2
Madera	1			6	
Merced			2	18	8
Napa			1		
Orange			4	26	
Placer				5	
Riverside			1	34	
Sacramento			32	20	
San Diego				2	
San Joaquin			1	40	
Santa Clara			5	7	
Shasta				2	
Solano			1		
Stanislaus	3		4	139	
Sutter				4	
Tulare			1	18	
Yolo				4	
Totals	5	1	64	474	12

**Does not include asymptomatic infections*

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	1	0	0
	YTD	5	0	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	73	18
	YTD	793	64

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	200	2	0	0
	YTD	3,281	12	0	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools		WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	102 / 1,763	32 / 1,669	0 / 1,559	0 / 17	0 / 17	0 / 17
		YTD	474 / 19,940	143 / 19,421	0 / 18,206	0 / 135	0 / 135	0 / 135

NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Burbank	91505	American Crow	7/12/2020	WNV
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Van Nuys	91405	American Crow	7/15/2020	WNV
Merced	Merced Co MAD	Atwater	95301	American Crow	7/21/2020	WNV
Orange	Orange Co VCD	Anaheim	92806	American Crow	7/22/2020	WNV
Orange	Orange Co VCD	Cypress	90630	American Crow	7/26/2020	WNV
Orange	Orange Co VCD	Cypress	90630	American Crow	7/26/2020	WNV
Riverside	Northwest Mosquito VCD	Corona	92880	American Crow	7/21/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Crow	7/26/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	Mourning Dove	7/23/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	California Scrub-Jay	7/27/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Yellow-billed Magpie	7/22/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Yellow-billed Magpie	7/24/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95827	Yellow-billed Magpie	7/27/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95838	Yellow-billed Magpie	7/21/2020	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95864	California Scrub-Jay	7/26/2020	WNV

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

Sacramento	Sacramento-Yolo MVCD	Sacramento	95864	Yellow-billed Magpie	7/22/2020	WNV
Solano	Solano Co MAD	Benicia	94510	California Scrub-Jay	7/12/2020	WNV
Tulare	Delta VCD	Visalia	93291	California Scrub-Jay	7/29/2020	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO0000	249	Cx. tarsalis	Oroville	43	CO2	7/29/20	WNV
Butte	BUCO123	228	Cx. tarsalis	Oroville	50	CO2	7/23/20	WNV
Butte	BUCO167	241	Cx. tarsalis	Gridley	50	CO2	7/28/20	WNV
Butte	BUCO167	244	Cx. tarsalis	Gridley	50	CO2	7/28/20	WNV
Butte	BUCO177	250	Cx. tarsalis	Nelson	50	CO2	7/28/20	WNV
Butte	BUCO37	254	Cx. tarsalis	Honcut	50	CO2	7/28/20	WNV
Butte	BUCO37	256	Cx. tarsalis	Honcut	50	CO2	7/28/20	WNV
Fresno	CNSL1068	435	Cx. tarsalis	Fresno	50	CO2	7/21/20	SLEV
Fresno	CNSL1153	737	Cx. quinquefasciatus	Fresno	50	GRVD	7/22/20	SLEV
Fresno	CNSL1253	748	Cx. quinquefasciatus	Fresno	24	GRVD	7/23/20	WNV
Fresno	CNSL1317	736	Cx. quinquefasciatus	Fresno	15	GRVD	7/21/20	WNV
Fresno	CNSL1397	750	Cx. quinquefasciatus	Clovis	26	GRVD	7/23/20	SLEV
Fresno	CNSL1454	444	Cx. quinquefasciatus	Fresno	35	GRVD	7/23/20	SLEV
Fresno	CNSL1460	734	Cx. quinquefasciatus	Clovis	12	GRVD	7/21/20	SLEV
Fresno	CNSL1563	747	Cx. quinquefasciatus	Clovis	50	GRVD	7/23/20	SLEV
Fresno	CNSL1563	747	Cx. quinquefasciatus	Clovis	50	GRVD	7/23/20	WNV
Fresno	CNSL1586	433	Cx. quinquefasciatus	Clovis	34	GRVD	7/21/20	WNV
Fresno	CNSL1624	436	Cx. quinquefasciatus	Fresno	50	GRVD	7/22/20	WNV
Fresno	CNSL1693	749	Cx. quinquefasciatus	Fresno	37	GRVD	7/23/20	SLEV
Fresno	CNSL1728	443	Cx. quinquefasciatus	Clovis	50	GRVD	7/23/20	SLEV
Fresno	CNSL1889	739	Cx. quinquefasciatus	Fresno	21	GRVD	7/22/20	WNV
Fresno	CNSL1970	437	Cx. quinquefasciatus	Clovis	50	GRVD	7/22/20	SLEV
Fresno	CNSL2546	751	Cx. quinquefasciatus	Sanger	17	GRVD	7/23/20	WNV
Fresno	CNSL3064	447	Cx. quinquefasciatus	Reedley	19	GRVD	7/24/20	WNV
Fresno	CNSL6074	438	Cx. quinquefasciatus	Caruthers	50	GRVD	7/22/20	WNV
Fresno	CNSL6240	440	Cx. quinquefasciatus	Caruthers	50	GRVD	7/22/20	WNV
Fresno	CNSL6292	742	Cx. quinquefasciatus	Caruthers	50	GRVD	7/22/20	WNV
Fresno	CNSL8079	430	Cx. quinquefasciatus	Clovis	20	GRVD	7/21/20	SLEV
Fresno	CNSL8079	430	Cx. quinquefasciatus	Clovis	20	GRVD	7/21/20	WNV
Fresno	CNSL8109	738	Cx. quinquefasciatus	Clovis	50	GRVD	7/22/20	WNV
Fresno	CNSL8146	449	Cx. quinquefasciatus	Fresno	23	GRVD	7/24/20	WNV
Fresno	CNSL9205	432	Cx. quinquefasciatus	Fresno	13	GRVD	7/21/20	SLEV
Fresno	FRNO151	306	Cx. quinquefasciatus	Fresno	50	GRVD	7/29/20	SLEV
Fresno	FRNO156	276	Cx. quinquefasciatus	Fresno	32	GRVD	7/21/20	WNV
Fresno	FRNO176	291	Cx. quinquefasciatus	Fresno	50	GRVD	7/28/20	SLEV
Fresno	FRNO183	266	Cx. quinquefasciatus	Fresno	40	GRVD	7/21/20	WNV
Fresno	FRNO19	305	Cx. quinquefasciatus	Fresno	50	GRVD	7/29/20	SLEV
Fresno	FRNO198	317	Cx. quinquefasciatus	Fresno	25	GRVD	7/30/20	SLEV
Fresno	FRNO198	317	Cx. quinquefasciatus	Fresno	25	GRVD	7/30/20	WNV
Fresno	FRNO207	293	Cx. quinquefasciatus	Fresno	50	GRVD	7/28/20	WNV

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

Fresno	FRNO207	294	Cx. quinquefasciatus	Fresno	50	GRVD	7/28/20	WNV
Fresno	FRNO87	308	Cx. quinquefasciatus	Fresno	50	GRVD	7/29/20	SLEV
Fresno	FRWS400027	168	Cx. tarsalis	Mendota	50	CO2	7/23/20	WNV
Kern	DLNO27	138	Cx. tarsalis	Wasco	50	CO2	7/22/20	WNV
Kern	KERN60	366	Cx. quinquefasciatus	Bakersfield	50	CO2	7/21/20	WNV
Kern	KERN83	365	Cx. tarsalis	Arvin	50	CO2	7/21/20	WNV
Lake	LAKE225	244	Cx. tarsalis	Lower Lake	50	CO2	7/28/20	WNV
Lake	LAKE302	280	Cx. tarsalis	Clearlake Oaks	50	CO2	7/29/20	WNV
Los Angeles	ANTV2627	57	Cx. tarsalis	Lancaster	16	CO2	7/28/20	WNV
Los Angeles	ANTV2627	58	Cx. quinquefasciatus	Lancaster	16	GRVD	7/28/20	WNV
Los Angeles	GRLA2889	364	Cx. quinquefasciatus	Lakewood	50	GRVD	7/23/20	WNV
Los Angeles	GRLA3053	374	Cx. quinquefasciatus	Hacienda Heights	50	GRVD	7/24/20	WNV
Los Angeles	LACW1048	384	Cx. quinquefasciatus	Inglewood	50	CO2	7/23/20	WNV
Los Angeles	SGVA8	756	Cx. quinquefasciatus	Pomona	49	GRVD	7/28/20	WNV
Madera	MADR1109	179	Cx. tarsalis	Madera	50	CO2	7/23/20	WNV
Madera	MADR3334	186	Cx. quinquefasciatus	Madera	50	CO2	7/23/20	WNV
Madera	MADR3334	187	Cx. tarsalis	Madera	50	CO2	7/23/20	WNV
Madera	MADR690	176	Cx. tarsalis	Madera	50	CO2	7/22/20	WNV
Merced	MERC1222	306	Cx. tarsalis	Merced	50	CO2	7/21/20	WNV
Merced	MERC1222	307	Cx. tarsalis	Merced	20	CO2	7/21/20	WNV
Merced	MERC201523	337	Cx. pipiens	Atwater	36	CO2	7/29/20	WNV
Merced	MERC201701	317	Cx. tarsalis	Hilmar	50	CO2	7/22/20	WNV
Merced	MERC201723	352	Cx. tarsalis	Winton	50	CO2	7/30/20	WNV
Merced	MERC201723	353	Cx. tarsalis	Winton	50	CO2	7/30/20	WNV
Merced	MERC423893	330	Cx. tarsalis	Atwater	6	BGSENT	7/29/20	WNV
Merced	MERC915	365	Cx. pipiens	Winton	24	CO2	7/30/20	WNV
Orange	ORCO1009	2530	Cx. quinquefasciatus	Garden Grove	36	GRVD	7/15/20	WNV
Orange	ORCO193	2593	Cx. quinquefasciatus	Huntington Beach	15	GRVD	7/16/20	WNV
Orange	ORCO218	2535	Cx. quinquefasciatus	Anaheim	33	GRVD	7/15/20	WNV
Orange	ORCO218	2861	Cx. quinquefasciatus	Anaheim	50	GRVD	7/28/20	WNV
Orange	ORCO236	2880	Cx. quinquefasciatus	Garden Grove	37	GRVD	7/28/20	WNV
Orange	ORCO82	2836	Cx. quinquefasciatus	Cypress	39	GRVD	7/28/20	WNV
Placer	PLCR1023	943	Cx. tarsalis	Roseville	50	CO2	7/28/20	WNV
Placer	PLCR194232	914	Cx. tarsalis	Roseville	50	CO2	7/28/20	WNV
Placer	PLCR25	938	Cx. tarsalis	Lincoln	50	CO2	7/28/20	WNV
Riverside	COAV0	3211	Cx. quinquefasciatus	Indio	19	GRVD	7/28/20	SLEV
Riverside	COAV0	3251	Cx. quinquefasciatus	Indio	50	BGSENT	7/24/20	SLEV
Riverside	COAV0	3280	Cx. tarsalis	Indio	50	CO2	7/28/20	SLEV
Riverside	COAV0	3284	Cx. tarsalis	Indio	8	CO2	7/28/20	SLEV
Riverside	COAV0	3285	Cx. tarsalis	Indio	29	CO2	7/28/20	SLEV
Riverside	COAV0	3291	Cx. tarsalis	Indio	17	CO2	7/30/20	SLEV
Riverside	COAV0	3292	Cx. tarsalis	Indio	50	CO2	7/30/20	SLEV
Riverside	COAV123	3286	Cx. tarsalis	Mecca	11	CO2	7/28/20	SLEV
Riverside	COAV123	3290	Cx. tarsalis	Mecca	33	CO2	7/30/20	SLEV
Riverside	COAV200	3247	Cx. quinquefasciatus	Mecca	19	BGSENT	7/24/20	SLEV
Riverside	COAV200	3256	Cx. quinquefasciatus	Mecca	11	GRVD	7/28/20	SLEV
Riverside	COAV200	3277	Cx. tarsalis	Mecca	22	CO2	7/28/20	SLEV
Riverside	COAV427	3225	Cx. quinquefasciatus	Palm Desert	26	GRVD	7/30/20	WNV
Riverside	COAV430	3266	Cx. quinquefasciatus	Indio	50	GRVD	7/28/20	SLEV
Riverside	COAV54	3289	Cx. tarsalis	North Shore	39	CO2	7/28/20	SLEV

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

Riverside	COAV57	3293	Cx. tarsalis	North Shore	50	CO2	7/30/20	SLEV
Riverside	COAV57	3294	Cx. tarsalis	North Shore	50	CO2	7/30/20	SLEV
Riverside	COAV58	3297	Cx. tarsalis	North Shore	41	CO2	7/30/20	WNV
Riverside	RIVR90	278	Cx. tarsalis	Nuevo	50	CO2	7/21/20	WNV
Riverside	RIVR90	279	Cx. tarsalis	Nuevo	50	CO2	7/21/20	WNV
Riverside	RIVR90	280	Cx. tarsalis	Nuevo	50	CO2	7/21/20	WNV
Sacramento	SAYO212033	3314	Cx. pipiens	Sacramento	15	GRVD	7/28/20	WNV
San Diego	SAND59	6458	Cx. tarsalis	Del Mar	1	CO2	7/22/20	WNV
San Joaquin	SJCM8008	1088	Cx. pipiens	Manteca	13	CO2	7/28/20	WNV
San Joaquin	SJCM8143	1061	Cx. tarsalis	Stockton	50	CO2	7/28/20	WNV
San Joaquin	SJCM8143	1062	Cx. tarsalis	Stockton	21	CO2	7/28/20	WNV
San Joaquin	SJCM8206	1079	Cx. tarsalis	Lodi	43	CO2	7/28/20	WNV
San Joaquin	SJCM8210	1081	Cx. tarsalis	Escalon	25	CO2	7/28/20	WNV
San Joaquin	SJCM8211	1067	Cx. tarsalis	Stockton	5	CO2	7/28/20	WNV
Stanislaus	EAST1025	20280	Cx. pipiens	Modesto	50	CO2	7/24/20	WNV
Stanislaus	EAST1025	20281	Cx. pipiens	Modesto	50	CO2	7/24/20	WNV
Stanislaus	EAST1025	20282	Cx. tarsalis	Modesto	42	CO2	7/24/20	WNV
Stanislaus	EAST1077	20277	Cx. pipiens	Modesto	43	GRVD	7/24/20	WNV
Stanislaus	TRLK1305	516	Cx. tarsalis	Patterson	50	CO2	7/28/20	WNV
Stanislaus	TRLK1509	562	Cx. tarsalis	Turlock	37	CO2	7/28/20	WNV
Stanislaus	TRLK1615	532	Cx. tarsalis	Modesto	50	CO2	7/28/20	WNV
Stanislaus	TRLK1615	534	Cx. tarsalis	Modesto	50	CO2	7/28/20	WNV
Stanislaus	TRLK1616	529	Cx. tarsalis	Modesto	50	CO2	7/28/20	WNV
Stanislaus	TRLK1673	541	Cx. tarsalis	Patterson	48	CO2	7/28/20	WNV
Stanislaus	TRLK2	517	Cx. tarsalis	Vernalis	50	CO2	7/28/20	WNV
Stanislaus	TRLK2	518	Cx. tarsalis	Vernalis	35	CO2	7/28/20	WNV
Stanislaus	TRLK319	564	Cx. tarsalis	Newman	50	CO2	7/28/20	WNV
Stanislaus	TRLK319	566	Cx. tarsalis	Newman	50	CO2	7/28/20	WNV
Stanislaus	TRLK322	525	Cx. pipiens	Vernalis	29	CO2	7/28/20	WNV
Stanislaus	TRLK424	536	Cx. tarsalis	Patterson	50	CO2	7/28/20	WNV
Stanislaus	TRLK424	538	Cx. tarsalis	Patterson	50	CO2	7/28/20	WNV
Stanislaus	TRLK516	470	Cx. pipiens	Denair	50	CO2	7/21/20	WNV
Stanislaus	TRLK9732	556	Cx. tarsalis	Newman	50	CO2	7/28/20	WNV
Stanislaus	TRLK9732	557	Cx. tarsalis	Newman	50	CO2	7/28/20	WNV
Tulare	DLNO10	151	Cx. quinquefasciatus	Earlimart	29	GRVD	7/28/20	WNV
Tulare	DLTA7517	1377	Cx. quinquefasciatus		50	CO2	7/29/20	WNV
Tulare	DLTA7517	1380	Cx. quinquefasciatus		46	CO2	7/29/20	WNV
Tulare	DLTA7520	1366	Cx. quinquefasciatus		50	CO2	7/29/20	WNV
Tulare	DLTA7520	1368	Cx. quinquefasciatus		50	CO2	7/29/20	WNV
Tulare	DLTA7520	1370	Cx. tarsalis		18	CO2	7/29/20	WNV
Tulare	DLTA8419	1385	Cx. quinquefasciatus	Goshen	24	GRVD	7/29/20	WNV
Tulare	DLTA9504	1331	Cx. quinquefasciatus	Visalia	14	GRVD	7/24/20	WNV
Yolo	SAYO115008	3395	Cx. tarsalis	Woodland	50	CO2	7/28/20	WNV
Yolo	SAYO134010	3173	Cx. tarsalis	Woodland	50	CO2	7/24/20	WNV

California Arbovirus Surveillance Bulletin #16

Week 31 Friday, July 31, 2020

Sentinel Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02
Los Angeles	LACW1026	Los Angeles	7/23/2020	WNV	2361	2362

TEST PROTOCOLS

Humans:

Specimens are tested by local laboratories with an IgM or IgG immunofluorescent assay (IFA) and/or an IgM enzyme immunoassay (EIA). Specimens with inconclusive results are forwarded to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL) for further testing with a plaque reduction neutralization test (PRNT).

Dead Birds

Oral swab samples collected from bird carcasses are tested at the UC Davis Arbovirus Research and Training laboratory (DART) or at a local agency for West Nile virus by RT-qPCR.

Sentinel Chickens:

Dried blood spot samples from sentinel chickens are tested at the California Department of Public Health Vector-Borne Disease Laboratory for IgG antibodies to West Nile, St. Louis encephalitis, and western equine encephalomyelitis viruses by an EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

Mosquito Pools:

Mosquito pools are tested at DART or at a local agency for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex RT-qPCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested at DART for chikungunya, dengue, and Zika viral RNA by a separate RT-qPCR.

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

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