

California Arbovirus Surveillance Bulletin #31

Week 40 Friday, October 4, 2013



WEEKLY UPDATE

Human Cases

West Nile virus

A total of 30 new cases of West Nile virus (WNV) illness were reported this week from 10 counties: Butte (1), Kern (2), Los Angeles (8), Madera (2), Orange (2), Riverside (4), San Bernardino (2), Stanislaus (4), Sutter (2), and Tulare (3). **These are the first WNV cases reported from Madera County this year.** As of October 1, 2013, a total of 206 cases of WNV illness have been reported in 26 counties. Of the 206 case-patients, 138 (67%) had neuroinvasive illness. The median age of the 206 individuals for whom data are available is 56 years (range: 5 - 93 years); 127 (62%) are male. Dates of symptom onset range from May 22 to September 17, 2013. Six WNV-related fatalities have been reported in Sacramento (1), Los Angeles (3), Glenn (1), and San Joaquin (1) counties. A total of 42 WNV-positive blood donors have been reported this year; six developed symptoms and were classified as case-patients. At this time last year, 231 cases had been reported from 28 counties.

National Comments: No new update. As of September 24, 2013, 1,135 cases of WNV had been reported nationwide from 45 states. Of these, 529 (47%) were classified as neuroinvasive disease, and 44 (4%) died.

Horses

No new equine cases were reported this week. In 2013, 10 horses from seven counties have tested positive for WNV; four have died as a result of their infection. At this time last year, 20 horses had tested positive for WNV from 12 counties.

Dead Birds & Squirrels

A total of 39 WNV positive birds were reported this week from the following 11 counties: Contra Costa (2), Kings (1), Los Angeles (1), Merced (4), Placer (9), Riverside (3), Sacramento (5), San Joaquin (1), Shasta (2), Sonoma (6), Yolo (5). In 2013, 1,134 dead birds have tested positive for WNV from 38 counties and 7 dead squirrels have tested positive for WNV from 5 counties. At this time last year, 1,456 dead birds and 16 tree squirrels had tested positive for recent WNV infection from 37 and 5 counties, respectively.

Mosquito Pools

A total of 61 WNV positive mosquito pools were reported this week from the following 11 counties: Butte (1), Fresno (2), Kings (2), Los Angeles (18), Riverside (1), Sacramento (3), San Bernardino (16), San Joaquin (3), Stanislaus (11), Tulare (3), and Yolo (1). In 2013, 2,440 mosquito pools from 27 counties have tested positive for WNV. At this time last year, 2,632 mosquito pools from 28 counties had tested positive for WNV.

Sentinel Chickens

A total of 21 sentinel chickens tested positive for WNV antibodies this week from 17 flocks in the following 10 counties: Butte (3), Contra Costa (1), Los Angeles (3), Merced (3), Placer (1), Riverside (2), Sacramento (1), Shasta (4), Solano (1), and Sutter (2). In 2013, 425 WNV antibody-positive chickens have been detected among 102 flocks in 25 counties. At this time last year, 442 WNV antibody-positive chickens had been detected among 95 flocks in 21 counties.

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YTD WNV Activity by Element and County, 2013						
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			13			
Butte	20		42	33	57	
Colusa	2		1		8	
Contra Costa	3	1	66	13	7	1
El Dorado	1					
Fresno	3		10	66		
Glenn	7		8	16	9	
Humboldt			1			
Kern	12	1	2	179	12	
Kings			11	77		
Lake			10	61	5	
Los Angeles	79		303	390	118	3
Madera	2		7	15	2	
Marin	2		5		1	
Mendocino			2			
Merced			38	8	21	
Napa	1		2			
Nevada			6		2	
Orange	5		29	30		
Placer	4	1	38	89	13	
Riverside	16	1	21	80	35	
Sacramento	3	3	170	380	6	
San Benito		1				
San Bernardino	4		31	225	20	1
San Diego			6			
San Francisco	1					
San Joaquin	5		34	161		
San Luis Obispo			1	1		
Santa Clara	1		49	25	2	
Santa Cruz			1	1		
Shasta			36	15	18	1
Solano	1		13	1	12	
Sonoma			22	5	1	
Stanislaus	12	2	13	156	8	
Sutter	8		16	61	35	
Tehama			3		8	
Trinity			1			
Tulare	4		5	93	4	
Ventura	1		8			1
Yolo	5		99	245	10	
Yuba	4		11	14	11	
Totals	206	10	1,134	2,440	425	7

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2012 & 2013 YTD West Nile Virus Comparisons		
	2012	2013
Total # Dead Bird Reports	18,088	13,366
# Positive Counties	41	41
# Human Cases	231	206
# Horse Cases	20	10
# Positive Dead Birds / # Tested	1,456 / 3,701	1,134 / 3,023
# Positive Mosquito Pools / # Tested	2,632 / 29,224	2,440 / 27,641
# Seroconversions / # Tested	442 / 19,713	425 / 14,380
# Positive Squirrels / # Tested	16 / 148	7 / 96

TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	30	0	0	0	0	0
	YTD	206	0	0	0	1	0
Horse Cases	Week	0	0	0	0	0	0
	YTD	10	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	67	39
	YTD	3,023	1,134
Tree Squirrels	Week	0	0
	YTD	96	7

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	498	21	0	0
	YTD	14,380	425	0	0
Mosquito Pools	Week	880	61	0	0
	YTD	27,641	2,440	0	0

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POSITIVES

Dead Birds

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Contra Costa	Contra Costa MVCD	Concord	94518	Western Scrub-Jay	10/3/2013	WNV	Recent	RAMP
Contra Costa	Contra Costa MVCD	Walnut Creek	94597	Western Scrub-Jay	10/1/2013	WNV	Recent	RAMP
Kings	Kings MAD	Hanford	93230	Western Scrub-Jay	9/16/2013	WNV	Recent	RT-PCR
Los Angeles	LA West VCD	Los Angeles	90035	American Crow	9/23/2013	WNV	Recent	RT-PCR
Merced	Merced MAD	Delhi	95315	Yellow-billed Magpie	9/19/2013	WNV	Recent	RT-PCR
Merced	Merced MAD	Merced	95341	American Crow	9/19/2013	WNV	Recent	RT-PCR
Merced	Merced MAD	Merced	95341	American Crow	9/12/2013	WNV	Recent	RT-PCR
Merced	Merced MAD	Merced	95341	Western Scrub-Jay	9/16/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Lincoln	95648	Western Scrub-Jay	9/18/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95648	Bewick's Wren	8/26/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Lincoln	95648	American Kestrel	9/18/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Loomis	95650	Finch	9/24/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Newcastle	95658	American Crow	9/23/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95678	Western Scrub-Jay	9/26/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Meadow Vista	95722	Western Scrub-Jay	9/18/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Granite Bay	95746	Oak Titmouse	9/17/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95747	Unknown	9/30/2013	WNV	Recent	RT-PCR
Riverside	NW Mosquito VCD	Riverside	92506	House Finch	9/12/2013	WNV	Recent	RT-PCR
Riverside	NW Mosquito VCD	Riverside	92507	American Crow	9/10/2013	WNV	Recent	RT-PCR
Riverside	NW Mosquito VCD	Lake Elsinore	92530	Common Raven	9/6/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Wilton	95693	Western Scrub-Jay	9/26/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Elk Grove	95758	Western Scrub-Jay	9/25/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Sacramento	95822	House Finch	9/27/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Sacramento	95831	American Crow	9/23/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Sacramento	95831	American Crow	9/20/2013	WNV	Recent	RT-PCR
San Joaquin	San Joaquin MVCD	Stockton	95203	Western Scrub-Jay	10/2/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Redding	96001	American Crow	9/27/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Redding	96001	Western Scrub-Jay	9/26/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Santa Rosa	95403	American Crow	9/24/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Santa Rosa	95405	American Crow	9/25/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Glen Ellen	95442	Western Scrub-Jay	9/27/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Healdsburg	95448	Western Scrub-Jay	9/26/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Sebastopol	95472	Western Scrub-Jay	9/20/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Windsor	95492	American Crow	9/26/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Davis	95616	American Crow	9/30/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Davis	95616	Western Scrub-Jay	9/24/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Davis	95618	House Finch	9/24/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Woodland	95695	American Crow	9/29/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Woodland	95695	American Crow	9/30/2013	WNV	Recent	RT-PCR

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Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap	Collected	Virus	Method
Butte	BUCO10	131	Cx. tarsalis	Richvale	50	CO2	9/16/13	WNV	RTPCR
Fresno	FRWS4102	199	Cx. tarsalis	Kerman	50	CO2	10/1/13	WNV	RTPCR
Fresno	FRWS4102	200	Cx. quinquefasciatus	Kerman	50	CO2	10/1/13	WNV	RTPCR
Kings	KNGS3018	372	Cx. tarsalis	Lemoore	50	CO2	9/17/13	WNV	RTPCR
Kings	KNGS3018	373	Cx. tarsalis	Lemoore	50	CO2	9/17/13	WNV	RTPCR
Los Angeles	GRLA2017	6065	Cx. quinquefasciatus	Toluca Lake	33	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA2097	978	Cx. quinquefasciatus	La Mirada	29	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2101	976	Cx. quinquefasciatus	Santa Fe Springs	35	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2247	975	Cx. quinquefasciatus	Pico Rivera	50	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2278	987	Cx. quinquefasciatus	Long Beach	45	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA2512	6059	Cx. quinquefasciatus	Los Angeles	48	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2574	6079	Cx. quinquefasciatus	Sherman Oaks	48	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA2889	986	Cx. quinquefasciatus	Lakewood	19	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA2890	990	Cx. quinquefasciatus	Lakewood	20	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA2936	6063	Cx. quinquefasciatus	Burbank	46	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2937	6062	Cx. quinquefasciatus	Burbank	50	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2953	979	Cx. quinquefasciatus	Santa Fe Springs	50	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA2957	985	Cx. quinquefasciatus	Hawaiian Gardens	29	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA3038	6071	Cx. quinquefasciatus	Valley Village	25	GRVD	9/27/13	WNV	RTPCR
Los Angeles	GRLA3048	974	Cx. quinquefasciatus	Pico Rivera	50	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA3074	970	Cx. quinquefasciatus	Lincoln Heights	50	GRVD	9/25/13	WNV	RTPCR
Los Angeles	GRLA3078	6057	Cx. quinquefasciatus	Los Feliz	50	GRVD	9/26/13	WNV	RTPCR
Los Angeles	GRLA3133	6049	Cx. quinquefasciatus	San Fernando	49	GRVD	9/24/13	WNV	RTPCR
Riverside	COAV40	1482	Cx. tarsalis	Mecca	11	CO2	9/24/13	WNV	RTPCR
Sacramento	SAYO204014	6227	Cx. pipiens	Citrus Heights	4	CO2	10/1/13	WNV	RTPCR
Sacramento	SAYO204014	6228	Cx. pipiens	Citrus Heights	2	GRVD	10/1/13	WNV	RTPCR
Sacramento	SAYO213010	6226	Cx. pipiens	Sacramento	12	GRVD	10/1/13	WNV	RTPCR
San Bernardino	WVAL2021	1199	Cx. quinquefasciatus	Fwy CA 71	5	GRVD	9/25/13	WNV	RTPCR
San Bernardino	WVAL5006	1173	Cx. quinquefasciatus	Rancho Cucamonga	11	GRVD	9/24/13	WNV	RTPCR
San Bernardino	WVAL5009	1232	Cx. quinquefasciatus	Rancho Cucamonga	12	GRVD	10/1/13	WNV	RTPCR
San Bernardino	WVAL6001	1227	Cx. quinquefasciatus	Ontario	25	GRVD	10/1/13	WNV	RTPCR
San Bernardino	WVAL6004	1158	Cx. quinquefasciatus	Ontario	50	GRVD	9/20/13	WNV	RTPCR
San Bernardino	WVAL6004	1161	Cx. quinquefasciatus	Ontario	31	GRVD	9/20/13	WNV	RTPCR
San Bernardino	WVAL6004	1163	Cx. quinquefasciatus	Ontario	50	GRVD	9/20/13	WNV	RTPCR
San Bernardino	WVAL6004	1164	Cx. quinquefasciatus	Ontario	50	GRVD	9/20/13	WNV	RTPCR
San Bernardino	WVAL6004	1193	Cx. quinquefasciatus	Ontario	50	GRVD	9/25/13	WNV	RTPCR
San Bernardino	WVAL6004	1195	Cx. quinquefasciatus	Ontario	50	GRVD	9/25/13	WNV	RTPCR
San Bernardino	WVAL6004	1235	Cx. quinquefasciatus	Ontario	22	GRVD	10/2/13	WNV	RTPCR
San Bernardino	WVAL6004	1236	Cx. quinquefasciatus	Ontario	50	GRVD	10/2/13	WNV	RTPCR
San Bernardino	WVAL6009	1215	Cx. quinquefasciatus	Ontario	50	GRVD	10/1/13	WNV	RTPCR
San Bernardino	WVAL7001	1183	Cx. quinquefasciatus	Montclair	31	GRVD	9/24/13	WNV	RTPCR
San Bernardino	WVAL7001	1212	Cx. quinquefasciatus	Montclair	27	GRVD	10/1/13	WNV	RTPCR
San Bernardino	WVAL7002	1168	Cx. quinquefasciatus	Montclair	20	GRVD	9/24/13	WNV	RTPCR
San Joaquin	SJCM8083	1522	Cx. tarsalis	Escalon	9	CO2	10/1/13	WNV	RTPCR
San Joaquin	SJCM8083	1523	Cx. pipiens	Escalon	6	CO2	10/1/13	WNV	RTPCR
San Joaquin	SJCM8135	1494	Cx. tarsalis	Mountain House	51	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK1301	1082	Cx. pipiens	Denair	30	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK1302	1078	Cx. pipiens	turlock	24	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK1303	983	Cx. pipiens	Patterson	11	CO2	9/19/13	WNV	RTPCR
Stanislaus	TRLK1304	1043	Cx. pipiens	Patterson	30	CO2	9/24/13	WNV	RTPCR
Stanislaus	TRLK1309	1124	Cx. pipiens	Hughson	50	CO2	10/1/13	WNV	RTPCR

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Stanislaus	TRLK407	1089	Cx. pipiens	Turlock	50	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK407	1090	Cx. pipiens	Turlock	50	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK424	1053	Cx. pipiens	Patterson	50	CO2	9/24/13	WNV	RTPCR
Stanislaus	TRLK516	1115	Cx. pipiens	Denair	50	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK536	1080	Cx. pipiens	Turlock	50	CO2	10/1/13	WNV	RTPCR
Stanislaus	TRLK809	1029	Cx. pipiens	Turlock	12	CO2	9/24/13	WNV	RTPCR
Tulare	DLTA8511	512	Cx. quinquefasciatus	Ivanhoe	32	CO2	9/27/13	WNV	RTPCR
Tulare	DLTA8512	511	Cx. quinquefasciatus	Ivanhoe	34	CO2	9/27/13	WNV	RTPCR
Tulare	DLTA9403	465	Cx. quinquefasciatus	Visalia	40	CO2	9/12/13	WNV	RTPCR
Yolo	SAYO135006	6164	Cx. pipiens	Woodland	2	GRVD	9/27/13	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Butte	BUCO0001	Chico	9/23/2013	WNV	1007		
Butte	BUCO0006	Chico	9/23/2013	WNV	1059		
Butte	BUCO0007	Chico	9/24/2013	WNV	1074		
Contra Costa	CNTR2302	Martinez	9/23/2013	WNV	1151		
Los Angeles	LACW1004	Lawndale	9/17/2013	WNV	1320	1321	1323
Merced	MERC0002	Dos Palos	9/27/2013	WNV	1458		
Merced	MERC0003	Gustine	9/27/2013	WNV	1467		
Merced	MERC00501	El Nido	9/27/2013	WNV	1484		
Placer	PLCR0672	Granite Bay	9/23/2013	WNV	1604		
Riverside	RIVR0001	San Jacinto	10/2/2013	WNV	3904		
Riverside	RIVR0002	Nuevo	10/2/2013	WNV	3931		
Sacramento	SAYO226009	Rancho Murrieta	9/26/2013	WNV	2173		
Shasta	SHAS0401	Happy Valley	9/26/2013	WNV	1825	1826	
Shasta	SHAS9702	Millville	9/26/2013	WNV	1812	1814	
Solano	SOLA0125	Cordelia	9/24/2013	WNV	1871		
Sutter	SUYA0031	Rio Oso	9/26/2013	WNV	2023		
Sutter	SUYA0084	Yuba City	9/26/2013	WNV	2007		

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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 or confirmation.

Horses:

Serum or brain tissue specimens from horses displaying neurological symptoms are submitted to the California Animal Health and Safety Laboratory (CAHFS) and tested by EIA and PRNT.

Dead Birds:

Oral swab samples from corvids are collected onto RNase cards and tested by the UC Davis Center for Vectorborne Diseases (CVEC) for West Nile virus by the singleplex RT-PCR Taqman assay and confirmed with a second primer set.

Sentinel Chickens:

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

Mosquito Pools:

Mosquito pools are submitted to CVEC and screened for WEEV, SLEV, and WNV viral RNA using a Taqman multiplex RT-PCR. CVEC will cease confirmation testing on PCR-positive pools of *Cx. tarsalis* and *Cx. quinquefasciatus* but will continue to confirm multiplex PCR-positive results for other mosquito species using singleplex RT-PCR.

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.westmile.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 website, www.cdc.gov, and the USGS website, www.westnilemaps.usgs.gov