

California Arbovirus Surveillance Bulletin #30

Week 39 Friday, September 27, 2013



WEEKLY UPDATE

Human Cases

West Nile virus

A total of 26 new cases of WNV illness were reported this week from nine counties: Butte (2), Contra Costa (1), Glenn (1), Kern (1), Los Angeles (9), Orange (1), Riverside (5), Stanislaus (2), and Yuba (4). **These are the first WNV cases reported from Yuba County this year.** As of September 24, 2013, a total of 176 cases of WNV illness have been reported in 25 counties. Of the 176 case-patients, 116 (66%) had neuroinvasive illness. The median age of the 176 individuals for whom data are available is 56 years (range: 7 - 93 years); 108 (61%) are male. Dates of symptom onset range from May 22 to September 9, 2013. Six WNV-related fatalities have been reported in Sacramento (1), Los Angeles (3), Glenn (1), and San Joaquin (1) counties. A total of 33 WNV-positive blood donors have been reported this year; six developed symptoms and were classified as case-patients. At this time last year, 182 cases had been reported from 26 counties.

National Comments: 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

One equine case of WNV illness was reported this week from San Benito County. The horse was unvaccinated for WNV and developed symptoms in early September. **This is the first indication of WNV activity in San Benito County this year.** 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 34 WNV positive birds were reported this week from the following 11 counties: Contra Costa (1), Lake (2), Los Angeles (1), Orange (6), Sacramento (8), San Bernardino (9), San Joaquin (1), Solano (1), Tulare (1), Ventura (1), and Yolo (3). In 2013, 1,095 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, 1,376 dead birds and 11 tree squirrels had tested positive for recent WNV infection from 37 and 5 counties, respectively.

Mosquito Pools

A total of 66 WNV positive mosquito pools were reported this week from 14 counties: Fresno (3), Kern (2), Kings (1), Los Angeles (15), Madera (1), Orange (3), Riverside (5), Sacramento (13), San Joaquin (3), Shasta (2), Sonoma (2), Stanislaus (5), Tulare (6), and Yolo (5). In 2013, 2,380 mosquito pools from 27 counties have tested positive for WNV. At this time last year, 2,541 mosquito pools from 28 counties had tested positive for WNV.

Sentinel Chickens

A total of 30 sentinel chickens tested positive for WNV antibodies this week from 18 flocks in 4 counties: Los Angeles (15), Merced (4), Riverside (9), and San Bernardino (2). In 2013, 404 WNV antibody-positive chickens have been detected among 99 flocks in 25 counties. At this time last year, 420 WNV antibody-positive chickens had been detected among 88 flocks in 20 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	19		42	32	54	
Colusa	2		1		8	
Contra Costa	3	1	64	13	6	1
El Dorado	1					
Fresno	3		10	64		
Glenn	7		8	16	9	
Humboldt			1			
Kern	10	1	2	179	12	
Kings			10	75		
Lake			10	61	5	
Los Angeles	71		302	372	115	3
Madera			7	15	2	
Marin	2		5		1	
Mendocino			2			
Merced			34	8	18	
Napa	1		2			
Nevada			6		2	
Orange	3		29	30		
Placer	4	1	29	89	12	
Riverside	12	1	18	79	33	
Sacramento	3	3	166	377	5	
San Benito		1				
San Bernardino	2		31	209	20	1
San Diego			6			
San Francisco	1					
San Joaquin	5		33	159		
San Luis Obispo			1	1		
Santa Clara	1		49	25	2	
Santa Cruz			1	1		
Shasta			34	15	14	1
Solano	1		13	1	11	
Sonoma			16	5	1	
Stanislaus	8	2	13	145	8	
Sutter	6		16	61	33	
Tehama			3		8	
Trinity			1			
Tulare	1		5	90	4	
Ventura	1		8			1
Yolo	5		93	244	10	
Yuba	4		11	14	11	
Totals	176	10	1,095	2,380	404	7

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2012 & 2013 YTD West Nile Virus Comparisons		
	2012	2013
Total # Dead Bird Reports	17,312	13,044
# Positive Counties	39	41
# Human Cases	182	176
# Horse Cases	20	10
# Positive Dead Birds / # Tested	1,376 / 3,550	1,095 / 2,956
# Positive Mosquito Pools / # Tested	2,541 / 28,140	2,380 / 26,761
# Seroconversions / # Tested	420 / 19,273	404 / 13,882
# Positive Squirrels / # Tested	11 / 132	7 / 96

TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	26	0	0	0	0	0
	YTD	176	0	0	0	1	0
Horse Cases	Week	1	0	0	0	0	0
	YTD	10	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	53	34
	YTD	2,956	1,095
Tree Squirrels	Week	0	0
	YTD	96	7

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	507	30	0	0
	YTD	13,882	404	0	0
Mosquito Pools	Week	1,062	66	0	0
	YTD	26,761	2,380	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	Martinez	94553	American Crow	9/23/2013	WNV	Recent	RAMP
Lake	Lake Co VCD	Kelseyville	95451	Steller's Jay	9/16/2013	WNV	Recent	RT-PCR
Lake	Lake Co VCD	Lakeport	95453	American Crow	9/13/2013	WNV	Recent	RT-PCR
Los Angeles	San Gabriel Valley MVCD	Altadena	91001	American Crow	9/25/2013	WNV	Recent	RAMP
Orange	Orange Co VCD	Cypress	90630	American Crow	9/19/2013	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Irvine	92604	American Crow	9/9/2013	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Irvine	92612	American Crow	9/13/2013	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Anaheim	92805	American Crow	9/13/2013	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Fullerton	92833	American Crow	9/13/2013	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Garden Grove	92840	American Crow	9/19/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	Bluebird	9/19/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Rancho Cordova	95670	Western Scrub-Jay	9/18/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Rio Linda	95673	Yellow-billed Magpie	9/19/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	Western Scrub-Jay	9/17/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95811	American Crow	9/18/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	American Crow	9/18/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	American Crow	9/20/2013	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95864	American Crow	9/18/2013	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	Mentone	92359	American Crow	9/17/2013	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	Yucaipa	92399	American Crow	9/16/2013	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	Yucaipa	92399	American Crow	9/18/2013	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	San Bernardino	92410	American Crow	9/17/2013	WNV	Recent	RT-PCR
San Bernardino	West Valley MVCD	Alta Loma	91701	American Crow	9/11/2013	WNV	Recent	RT-PCR
San Bernardino	West Valley MVCD	Chino	91710	American Crow	8/28/2013	WNV	Recent	RT-PCR
San Bernardino	West Valley MVCD	Chino	91710	American Crow	8/28/2013	WNV	Recent	RT-PCR
San Bernardino	West Valley MVCD	Chino	91710	American Crow	9/6/2013	WNV	Recent	RT-PCR
San Bernardino	West Valley MVCD	Rancho Cucamonga	91730	American Crow	9/11/2013	WNV	Recent	RT-PCR
San Joaquin	San Joaquin Co MVCD	Acampo	95220	American Crow	9/19/2013	WNV	Recent	RT-PCR
Solano	Solano Co MAD	Vallejo	94589	American Crow	9/19/2013	WNV	Recent	RAMP
Tulare	Delta VCD	Goshen	93227	American Crow	9/19/2013	WNV	Recent	RT-PCR
Ventura	Ventura Co EHD	Simi Valley	93065	American Crow	9/11/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Davis	95616	American Crow	9/17/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Davis	95618	Western Scrub-Jay	9/18/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Woodland	95695	American Crow	9/23/2013	WNV	Recent	RT-PCR

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Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap	Collected	Virus	Method
Fresno	FRWS100007	175	Cx. tarsalis	Firebaugh	23	CO2	9/23/13	WNV	RTPCR
Fresno	FRWS4102	179	Cx. quinquefasciatus	Kerman	50	CO2	9/23/13	WNV	RTPCR
Fresno	FRWS5110	173	Cx. tarsalis	Tranquillity	50	CO2	9/23/13	WNV	RTPCR
Kern	KERN3033	456	Cx. quinquefasciatus	Bakersfield	50	CO2	9/17/13	WNV	RTPCR
Kern	KERN41	463	Cx. tarsalis	Lost Hills	50	CO2	9/17/13	WNV	RTPCR
Kings	KNGS3004	309	Cx. tarsalis	Lemoore	50	CO2	9/4/13	WNV	RTPCR
Los Angeles	GRLA2017	6020	Cx. quinquefasciatus	Toluca Lake	50	GRVD	9/18/13	WNV	RTPCR
Los Angeles	GRLA2065	952	Cx. quinquefasciatus	Gardena	12	CO2	9/20/13	WNV	RTPCR
Los Angeles	GRLA2101	939	Cx. quinquefasciatus	Santa Fe Springs	17	GRVD	9/19/13	WNV	RTPCR
Los Angeles	GRLA2166	936	Cx. quinquefasciatus	Montebello	50	GRVD	9/19/13	WNV	RTPCR
Los Angeles	GRLA2270	923	Cx. quinquefasciatus	Bellflower	50	GRVD	9/17/13	WNV	RTPCR
Los Angeles	GRLA2300	926	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/17/13	WNV	RTPCR
Los Angeles	GRLA2346	935	Cx. quinquefasciatus	Montebello	37	GRVD	9/19/13	WNV	RTPCR
Los Angeles	GRLA2635	6036	Cx. quinquefasciatus	Van Nuys	37	GRVD	9/20/13	WNV	RTPCR
Los Angeles	GRLA3038	6022	Cx. quinquefasciatus	Valley Village	50	GRVD	9/18/13	WNV	RTPCR
Los Angeles	GRLA3047	925	Cx. quinquefasciatus	Downey	35	GRVD	9/17/13	WNV	RTPCR
Los Angeles	GRLA3048	937	Cx. quinquefasciatus	Pico Rivera	50	GRVD	9/19/13	WNV	RTPCR
Los Angeles	GRLA3055	915	Cx. quinquefasciatus	Maywood	50	GRVD	9/17/13	WNV	RTPCR
Los Angeles	GRLA3056	916	Cx. quinquefasciatus	Cudahy	50	GRVD	9/17/13	WNV	RTPCR
Los Angeles	GRLA3058	920	Cx. quinquefasciatus	Lynwood	27	GRVD	9/17/13	WNV	RTPCR
Los Angeles	GRLA3062	930	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/17/13	WNV	RTPCR
Madera	MADR1043	75	Cx. tarsalis	Madera	15	CO2	9/10/13	WNV	RTPCR
Orange	ORCO0	1410	Cx. quinquefasciatus	Garden Grove	37	CO2	9/18/13	WNV	RTPCR
Orange	ORCO50	1407	Cx. quinquefasciatus	Buena Park	19	GRVD	9/18/13	WNV	RTPCR
Orange	ORCO81	1393	Cx. quinquefasciatus	Seal Beach	11	GRVD	9/17/13	WNV	RTPCR
Riverside	COAV201	1446	Cx. quinquefasciatus	Thermal	50	CO2	9/19/13	WNV	RTPCR
Riverside	NWST29	252	Cx. tarsalis	Calimesa	50	CO2	9/19/13	WNV	RTPCR
Riverside	NWST39	231	Cx. quinquefasciatus	lake elsinore	50	CO2	9/17/13	WNV	RTPCR
Riverside	RIVR32	595	Cx. tarsalis	Nuevo	50	CO2	9/24/13	WNV	RTPCR
Riverside	RIVR54	614	Cx. quinquefasciatus	Moreno Valley	20	CO2	9/25/13	WNV	RTPCR
Sacramento	SAYO212021	5832	Cx. tarsalis	Sacramento	8	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO226001	5797	Cx. pipiens	Sloughhouse	8	GRVD	9/20/13	WNV	RTPCR
Sacramento	SAYO226008	5791	Cx. tarsalis	Rancho Murieta	35	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO232012	5803	Cx. tarsalis	Elk Grove	39	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO232012	5804	Cx. pipiens	Elk Grove	43	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO232012	5805	Cx. pipiens	Elk Grove	50	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO233009	5813	Cx. pipiens	Elk Grove	30	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO234013	5947	Cx. pipiens	Elk Grove	33	CO2	9/24/13	WNV	RTPCR
Sacramento	SAYO242013	5821	Cx. pipiens	Hood	6	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO245002	5782	Cx. pipiens	Wilton	42	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO245002	5783	Cx. tarsalis	Wilton	46	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO254029	5766	Cx. tarsalis	Galt	27	CO2	9/20/13	WNV	RTPCR
Sacramento	SAYO271007	5874	Cx. tarsalis	Isleton	50	CO2	9/20/13	WNV	RTPCR
San Joaquin	SJCM8004	1459	Cx. tarsalis	Lodi	7	CO2	9/24/13	WNV	RTPCR
San Joaquin	SJCM8020	1446	Cx. pipiens	Acampo	50	CO2	9/24/13	WNV	RTPCR
San Joaquin	SJCM9906	1423	Cx. pipiens	French Camp	50	CO2	9/19/13	WNV	RTPCR
Shasta	SHAS10050	255	Cx. tarsalis	Cottonwood	15	CO2	9/17/13	WNV	RTPCR
Shasta	SHAS116	259	Cx. pipiens	Anderson	37	CO2	9/17/13	WNV	RTPCR
Sonoma	MARN118	1227	Cx. stigmatosoma	Cloverdale	5	GRVD	9/19/13	WNV	RTPCR
Sonoma	MARN482	1235	Cx. stigmatosoma	Healdsburg	50	GRVD	9/20/13	WNV	RTPCR

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Stanislaus	TRLK1313	1023	Cx. pipiens	Turlock	50	CO2	9/24/13	WNV	RTPCR
Stanislaus	TRLK420	988	Cx. tarsalis	Turlock	50	CO2	9/19/13	WNV	RTPCR
Stanislaus	TRLK437	1044	Cx. pipiens	Patterson	50	CO2	9/24/13	WNV	RTPCR
Stanislaus	TRLK536	1027	Cx. pipiens	Turlock	50	CO2	9/24/13	WNV	RTPCR
Stanislaus	TRLK711	990	Cx. pipiens	Hughson	45	CO2	9/19/13	WNV	RTPCR
Tulare	DLTA7529	478	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA7529	479	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA7529	498	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA7529	499	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA7529	500	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA8434	503	Cx. quinquefasciatus	Visalia	15	GRVD	9/19/13	WNV	RTPCR
Yolo	SAYO135006	5885	Cx. tarsalis	Woodland	50	CO2	9/20/13	WNV	RTPCR
Yolo	SAYO145013	6037	Cx. tarsalis	Davis	50	CO2	9/24/13	WNV	RTPCR
Yolo	SAYO147013	5865	Cx. pipiens	West Sacramento	11	CO2	9/20/13	WNV	RTPCR
Yolo	SAYO147014	5861	Cx. pipiens	West Sacramento	5	GRVD	9/20/13	WNV	RTPCR
Yolo	SAYO147014	5863	Cx. tarsalis	West Sacramento	36	CO2	9/20/13	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04	Band 05
Los Angeles	ANTV2667	Palmdale	9/18/2013	WNV	3640				
Los Angeles	ANTV2877	Lancaster	9/18/2013	WNV	3625				
Los Angeles	ANTV7947	Palmdale	9/18/2013	WNV	3649				
Los Angeles	GRLA2615	Newhall	9/16/2013	WNV	2611	2612	2614		
Los Angeles	LACW1001	Rolling Hills Estates	9/11/2013	WNV	1422				
Los Angeles	LACW1002	Torrance	9/5/2013	WNV	1416	1418			
Los Angeles	LACW1010	Los Angeles(Miracle Mile)	9/4/2013	WNV	1415				
Los Angeles	LACW1049	Inglewood	9/10/2013	WNV	1404	1405	1406	1407	1408
Merced	MERC0501	El Nido	9/13/2013	WNV	1483	1486			
Merced	MERC0502	Hilmar	9/13/2013	WNV	1490	1492			
Riverside	COAV0122	Mecca	9/16/2013	WNV	3207				
Riverside	COAV0200	Mecca	9/16/2013	WNV	3138	3140	3202		
Riverside	COAV0035	Mecca	9/16/2013	WNV	3206				
Riverside	COAV0060	North Shore	9/16/2013	WNV	3187				
Riverside	NWST9226		9/18/2013	WNV	3989				
Riverside	RIVR0001	San Jacinto	9/18/2013	WNV	3906	3910			
San Bernardino	SANB0002	Redlands	9/16/2013	WNV	3318				
San Bernardino	SANB0006	Yucaipa	9/16/2013	WNV	3344				

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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 and Tree Squirrels:

Dead birds and tree squirrels are necropsied at CAHFS laboratory at University of California, Davis. Oral swabs from American Crows and kidney tissue from all other dead birds and squirrels are forwarded to the UC Davis Center for Vectorborne Diseases (CVEC) for West Nile virus testing using 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.westmileaps.usgs.gov