

California Arbovirus Surveillance Bulletin #29

Week 38 Friday, September 20, 2013



WEEKLY UPDATE

Human Cases

St. Louis encephalitis virus

In late June, the California Department of Public Health was notified by Fresno County of their first West Nile virus (WNV) case of the season. Further testing at the Viral and Rickettsial Disease Laboratory suggested evidence of infection with a closely related virus, St. Louis encephalitis virus, (SLEV) rather than WNV. Because of this unexpected finding, specimens were forwarded to the U.S. Centers for Disease Control and Prevention (CDC) for further testing. Test results from the CDC confirmed recent SLEV infection.

The individual had no reported history of travel outside Fresno County. This detection of SLEV is significant because the last confirmed human SLEV case in California was in 1997 (Los Angeles County) and the last detection in mosquitoes or sentinel chickens was in 2003. Nationally, five other states have reported SLEV activity in 2013, including one state (Tennessee) with a human disease case. Human infections of SLEV are similar to WNV; in many instances, infected individuals do not experience illness. In those who become ill, symptoms can include fever, headache, nausea, vomiting and/or fatigue. A small percentage of infected individuals will develop neuro-invasive illness such as encephalitis.

West Nile virus

A total of 33 new cases of WNV illness were reported this week from 12 counties: Butte (8), Colusa (1), Glenn (1), Los Angeles (8), Placer (3), Riverside (3), San Bernardino (1), San Joaquin (2), Stanislaus (3), Sutter (1), Tulare (1), and Yolo (1). **This is the first WNV case reported from Tulare County this year.** As of September 17, 2013, a total of 150 cases of WNV illness have been reported in 24 counties. Of the 150 case-patients, 101 (67%) had neuroinvasive illness. The median age of the 150 individuals for whom data are available is 57 years (range: 7 - 93 years); 91 (61%) are male. Dates of symptom onset range from June 20 to August 27, 2013. Six WNV-related fatalities have been reported in Sacramento (1), Los Angeles (3), Glenn (1), and San Joaquin (1) counties. A total of 30 WNV-positive blood donors have been reported this year; six developed symptoms and were classified as case-patients. At this time last year, 147 cases had been reported from 24 counties.

National Comments: As of September 17, 2013, 842 WNV cases had been reported nationwide from 45 states. Of these, 407 (46%) were classified as neuroinvasive disease, and 33 (4%) died.

Horses

One equine case of WNV was reported this week from Contra Costa County. In 2013, nine horses from six counties have tested positive for WNV; four have died as a result of their infection. At this time last year, 17 horses had tested positive for WNV from 10 counties.

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Dead Birds & Squirrels

A total of 44 WNV positive birds were reported this week from the following 16 counties: Contra Costa (1), Lake (1), Los Angeles (4), Marin (1), Placer (1), Sacramento (8), San Bernardino (1), San Diego (1), San Joaquin (3), Shasta (5), Solano (2), Sonoma (7), Sutter (2), Tulare (1), Yolo (4), and Yuba (2). In 2013, 1,061 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, 1,290 dead birds and 9 tree squirrels had tested positive for recent WNV infection from 36 and 5 counties, respectively.

Mosquito Pools

A total of 141 WNV positive mosquito pools were reported this week from 17 counties: Butte (3), Contra Costa (1), Fresno (7), Kern (18), Kings (3), Los Angeles (22), Merced (1), Orange (14), Placer (1), Riverside (5), Sacramento (14), San Bernardino (15), San Joaquin (8), Sonoma (2), Stanislaus (9), Tulare (7), and Yolo (11). In 2013, 2,314 mosquito pools from 27 counties have tested positive for WNV. At this time last year, 2,417 mosquito pools from 28 counties had tested positive for WNV.

Sentinel Chickens

A total of 44 sentinel chickens tested positive for WNV antibodies this week from 23 flocks in 12 counties: Butte (4), Contra Costa (1), Kern (6), Los Angeles (9), Nevada (1), Placer (2), Santa Clara (1), Shasta (6), Solano (4), Tehama (4), Tulare (4), and Yuba (2). **These are the first WNV seroconversions detected in Tulare County this year.** In 2013, 374 WNV antibody-positive chickens have been detected among 91 flocks in 25 counties. At this time last year, 389 WNV antibody-positive chickens had been detected among 87 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	17		42	32	54	
Colusa	2		1		8	
Contra Costa	2	1	63	13	6	1
El Dorado	1					
Fresno	3		10	61		
Glenn	6		8	16	9	
Humboldt			1			
Kern	9	1	2	177	12	
Kings			10	74		
Lake			8	61	5	
Los Angeles	62		301	357	100	3
Madera			7	14	2	
Marin	2		5		1	
Mendocino			2			
Merced			34	8	14	
Napa	1		2			
Nevada			6		2	
Orange	2		23	27		
Placer	4	1	29	89	12	
Riverside	7	1	18	74	24	
Sacramento	3	3	158	364	5	
San Bernardino	2		22	209	18	1
San Diego			6			
San Francisco	1					
San Joaquin	5		32	156		
San Luis Obispo			1	1		
Santa Clara	1		49	25	2	
Santa Cruz			1	1		
Shasta			34	13	14	1
Solano	1		12	1	11	
Sonoma			16	3	1	
Stanislaus	6	2	13	140	8	
Sutter	6		16	61	33	
Tehama			3		8	
Trinity			1			
Tulare	1		4	84	4	
Ventura	1		7			1
Yolo	5		90	239	10	
Yuba			11	14	11	
Totals	150	9	1,061	2,314	374	7

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2012 & 2013 YTD West Nile Virus Comparisons		
	2012	2013
Total # Dead Bird Reports	16,555	12,720
# Positive Counties	35	40
# Human Cases	147	150
# Horse Cases	17	9
# Positive Dead Birds / # Tested	1,290 / 3,367	1,061 / 2,903
# Positive Mosquito Pools / # Tested	2,417 / 26,536	2,314 / 25,699
# Seroconversions / # Tested	389 / 18,574	374 / 13,375
# Positive Squirrels / # Tested	9 / 121	7 / 96

TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	33	0	0	0	1	0
	YTD	150	0	0	0	1	0
Horse Cases	Week	1	0	0	0	0	0
	YTD	9	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	72	44
	YTD	2,903	1,061
Tree Squirrels	Week	0	0
	YTD	96	7

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	435	44	0	0
	YTD	13,375	374	0	0
Mosquito Pools	Week	1,334	141	0	0
	YTD	25,699	2,314	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	Brentwood	94513	Western Scrub-Jay	9/18/2013	WNV	Recent	RAMP
Lake	Lake Co VCD	Lakeport	95453	American Crow	9/9/2013	WNV	Recent	RT-PCR
Los Angeles	LA West VCD	Manhattan Beach	90266	American Crow	9/12/2013	WNV	Recent	RT-PCR
Los Angeles	LA West VCD	Torrance	90501	American Crow	9/11/2013	WNV	Recent	RT-PCR
Los Angeles	San Gabriel Valley MVCD	Covina	91723	American Crow	9/18/2013	WNV	Recent	RAMP
Los Angeles	San Gabriel Valley MVCD	San Gabriel	91775	American Crow	9/13/2013	WNV	Recent	RAMP
Marin	Marin-Sonoma MVCD	Novato	94945	American Crow	9/4/2013	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95747	House Finch	9/4/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Elk Grove	95624	Western Scrub-Jay	9/16/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Fair Oaks	95628	Western Scrub-Jay	9/10/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Orangevale	95662	American Crow	9/16/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Gold River	95670	American Crow	9/16/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Rancho Murieta	95683	Western Bluebird	9/14/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Sacramento	95817	American Crow	9/12/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Sacramento	95822	American Crow	9/16/2013	WNV	Recent	RT-PCR
Sacramento	Sac-Yolo MVCD	Sacramento	95833	Yellow-billed Magpie	9/16/2013	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	Redlands	92374	American Crow	9/7/2013	WNV	Recent	RT-PCR
San Diego	San Diego Co VCP	Lakeside	92040	American Crow	9/6/2013	WNV	Recent	RT-PCR
San Joaquin	San Joaquin MVCD	Acampo	95220	Western Scrub-Jay	9/11/2013	WNV	Recent	RT-PCR
San Joaquin	San Joaquin MVCD	Lodi	95242	Western Scrub-Jay	9/13/2013	WNV	Recent	RT-PCR
San Joaquin	San Joaquin MVCD	Manteca	95336	Yellow-billed Magpie	9/10/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Redding	96003	Western Scrub-Jay	9/11/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Redding	96003	American Crow	9/12/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Redding	96003	American Crow	9/12/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Redding	96003	Western Scrub-Jay	9/3/2013	WNV	Recent	RT-PCR
Shasta	Shasta MVCD	Anderson	96007	Yellow-billed Magpie	9/4/2013	WNV	Recent	RT-PCR
Solano	Solano Co MAD	Dixon	95620	American Crow	9/17/2013	WNV	Recent	RAMP
Solano	Solano Co MAD	Vacaville	95688	Western Scrub-Jay	9/10/2013	WNV	Recent	RAMP
Sonoma	Marin-Sonoma MVCD	Rohnert Park	94928	American Crow	9/3/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Forestville	95436	Western Scrub-Jay	9/11/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Healdsburg	95448	American Crow	9/12/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Sebastopol	95472	Western Scrub-Jay	9/8/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Sebastopol	95472	American Crow	9/12/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Sebastopol	95472	American Crow	9/12/2013	WNV	Recent	RT-PCR
Sonoma	Marin-Sonoma MVCD	Windsor	95492	Western Scrub-Jay	9/5/2013	WNV	Recent	RT-PCR
Sutter	Sutter-Yuba MVCD	Yuba City	95991	Western Scrub-Jay	8/29/2013	WNV	Recent	RT-PCR
Sutter	Sutter-Yuba MVCD	Yuba City	95991	Western Scrub-Jay	9/9/2013	WNV	Recent	RT-PCR
Tulare	Delta VCD	Visalia	93291	American Crow	9/9/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Davis	95618	American Crow	9/12/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	W Sacramento	95691	American Crow	9/11/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Woodland	95695	American Crow	9/11/2013	WNV	Recent	RT-PCR
Yolo	Sac-Yolo MVCD	Woodland	95695	American Crow	9/16/2013	WNV	Recent	RT-PCR
Yuba	Sutter-Yuba MVCD	Marysville	95901	American Crow	9/6/2013	WNV	Recent	RT-PCR
Yuba	Sutter-Yuba MVCD	Marysville	95901	American Crow	9/4/2013	WNV	Recent	RT-PCR

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Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap	Collected	Virus	Method
Butte	BUCO34	116	Cx. tarsalis	Richvale	50	CO2	9/3/13	WNV	RTPCR
Butte	BUCO37	123	Cx. tarsalis	Honcut	50	CO2	9/9/13	WNV	RTPCR
Butte	BUCO43	120	Cx. tarsalis	Chico	50	CO2	9/4/13	WNV	RTPCR
Contra Costa	CNTR3802	347	Cx. tarsalis	Antioch	8	CO2	9/16/13	WNV	RTPCR
Fresno	FRNO79	49	Cx. quinquefasciatus	Easton	46	CO2	9/17/13	WNV	RTPCR
Fresno	FRWS100001	136	Cx. quinquefasciatus	Dos Palos	50	CO2	9/12/13	WNV	RTPCR
Fresno	FRWS100006	131	Cx. tarsalis	Dos Palos	50	CO2	9/12/13	WNV	RTPCR
Fresno	FRWS100007	144	Cx. quinquefasciatus	Firebaugh	35	CO2	9/17/13	WNV	RTPCR
Fresno	FRWS400007	140	Cx. quinquefasciatus	Kerman	20	CO2	9/13/13	WNV	RTPCR
Fresno	FRWS4102	141	Cx. tarsalis	Kerman	34	CO2	9/13/13	WNV	RTPCR
Fresno	FRWS4102	142	Cx. quinquefasciatus	Kerman	17	CO2	9/13/13	WNV	RTPCR
Kern	DLNO9	71	Cx. quinquefasciatus	McFarland	30	GRVD	9/16/13	WNV	RTPCR
Kern	KERN1105	439	Cx. tarsalis	Lost Hills	50	CO2	9/10/13	WNV	RTPCR
Kern	KERN121	436	Cx. quinquefasciatus	Bakersfield	50	GRVD	9/10/13	WNV	RTPCR
Kern	KERN38	445	Cx. quinquefasciatus	Wasco	19	CO2	9/11/13	WNV	RTPCR
Kern	KERN9	451	Cx. quinquefasciatus	Bakersfield	20	CO2	9/13/13	WNV	RTPCR
Kern	WEST6209	185	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	186	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	187	Cx. tarsalis	Maricopa	49	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	188	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	189	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	190	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	191	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	192	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6209	194	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6237	176	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6237	177	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6237	181	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kern	WEST6237	182	Cx. tarsalis	Maricopa	50	CO2	9/18/13	WNV	RTPCR
Kings	KNGS3004	332	Cx. erythrothorax	Lemoore	50	CO2	9/9/13	WNV	RTPCR
Kings	KNGS3086	328	Cx. pipiens	Corcoran	20	CO2	9/6/13	WNV	RTPCR
Kings	KNGS5504	359	Cx. pipiens	Hanford	14	CO2	9/10/13	WNV	RTPCR
Los Angeles	GRLA2194	896	Cx. quinquefasciatus	South El Monte	31	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2278	909	Cx. quinquefasciatus	Long Beach	32	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2329	895	Cx. quinquefasciatus	Whittier	37	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2359	898	Cx. quinquefasciatus	Pico Rivera	22	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2414	6004	Cx. quinquefasciatus	Granada Hills	18	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2421	6006	Cx. quinquefasciatus	Panorama City	50	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2500	5994	Cx. quinquefasciatus	Los Angeles	25	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2512	5996	Cx. quinquefasciatus	Los Angeles	18	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2552	5992	Cx. quinquefasciatus	Glendale	25	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2574	5998	Cx. quinquefasciatus	Sherman Oaks	50	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2580	5997	Cx. quinquefasciatus	Sherman Oaks	33	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2637	6002	Cx. quinquefasciatus	Van Nuys	50	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2650	6001	Cx. quinquefasciatus	Encino	50	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2651	5999	Cx. quinquefasciatus	Encino	50	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2889	907	Cx. quinquefasciatus	Lakewood	28	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA2890	908	Cx. quinquefasciatus	Lakewood	38	GRVD	9/12/13	WNV	RTPCR

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Los Angeles	GRLA2937	5995	Cx. quinquefasciatus	Burbank	29	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA2957	904	Cx. quinquefasciatus	Hawaiian Gardens	44	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA3034	6003	Cx. quinquefasciatus	North Hills	50	GRVD	9/12/13	WNV	RTPCR
Los Angeles	GRLA3044	897	Cx. quinquefasciatus	South El Monte	43	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA3045	910	Cx. quinquefasciatus	Whittier	50	GRVD	9/11/13	WNV	RTPCR
Los Angeles	GRLA3133	5984	Cx. quinquefasciatus	San Fernando	12	GRVD	9/10/13	WNV	RTPCR
Merced	MERC1103	136	Cx. pipiens		50	CO2	9/12/13	WNV	RTPCR
Orange	ORCO1	1380	Cx. quinquefasciatus	Irvine	9	GRVD	9/12/13	WNV	RTPCR
Orange	ORCO130	1263	Cx. quinquefasciatus	Garden Grove	26	GRVD	9/4/13	WNV	RTPCR
Orange	ORCO2	1265	Cx. quinquefasciatus	Fullerton	30	GRVD	9/4/13	WNV	RTPCR
Orange	ORCO202	1275	Cx. quinquefasciatus	Fullerton	18	GRVD	9/4/13	WNV	RTPCR
Orange	ORCO204	1269	Cx. quinquefasciatus	Fullerton	21	GRVD	9/4/13	WNV	RTPCR
Orange	ORCO22	1367	Cx. erythrothorax	Irvine	47	CO2	9/12/13	WNV	RTPCR
Orange	ORCO24	1366	Cx. erythrothorax	Mission Viejo	15	CO2	9/12/13	WNV	RTPCR
Orange	ORCO3	1353	Cx. quinquefasciatus	Garden Grove	20	GRVD	9/11/13	WNV	RTPCR
Orange	ORCO34	1363	Cx. quinquefasciatus	Brea	28	GRVD	9/11/13	WNV	RTPCR
Orange	ORCO50	1268	Cx. quinquefasciatus	Buena Park	21	GRVD	9/4/13	WNV	RTPCR
Orange	ORCO58	1374	Cx. quinquefasciatus	Laguna Niguel	8	CO2	9/12/13	WNV	RTPCR
Orange	ORCO6	1381	Cx. quinquefasciatus	Irvine	11	GRVD	9/12/13	WNV	RTPCR
Orange	ORCO6	1382	Cx. tarsalis	Irvine	10	CO2	9/12/13	WNV	RTPCR
Orange	ORCO82	1267	Cx. quinquefasciatus	Cypress	25	GRVD	9/4/13	WNV	RTPCR
Placer	PLCR95	1774	Cx. tarsalis	Lincoln	37	CO2	9/17/13	WNV	RTPCR
Riverside	COAV604	1393	Cx. quinquefasciatus	Palm Springs	16	CO2	9/11/13	WNV	RTPCR
Riverside	COAV604	1394	Cx. quinquefasciatus	Palm Springs	11	CO2	9/11/13	WNV	RTPCR
Riverside	COAV604	1395	Cx. quinquefasciatus	Palm Springs	30	CO2	9/11/13	WNV	RTPCR
Riverside	COAV604	1406	Cx. quinquefasciatus	Palm Springs	14	GRVD	9/12/13	WNV	RTPCR
Riverside	NWST37	214	Cx. quinquefasciatus	Calimesa	32	GRVD	9/11/13	WNV	RTPCR
Sacramento	SAYO203011	5700	Cx. tarsalis	Antelope	13	CO2	9/17/13	WNV	RTPCR
Sacramento	SAYO204025	5452	Cx. pipiens	Citrus Heights	34	GRVD	9/10/13	WNV	RTPCR
Sacramento	SAYO212002	5624	Cx. pipiens	Sacramento	35	GRVD	9/13/13	WNV	RTPCR
Sacramento	SAYO213028	5696	Cx. pipiens	Carmichael	3	GRVD	9/17/13	WNV	RTPCR
Sacramento	SAYO232028	5751	Cx. tarsalis	Sacramento	47	CO2	9/17/13	WNV	RTPCR
Sacramento	SAYO232028	5754	Cx. tarsalis	Sacramento	50	CO2	9/17/13	WNV	RTPCR
Sacramento	SAYO232028	5757	Cx. erythrothorax	Sacramento	1	CO2	9/17/13	WNV	RTPCR
Sacramento	SAYO233032	5634	Cx. tarsalis	Sacramento	12	CO2	9/17/13	WNV	RTPCR
Sacramento	SAYO235005	5472	Cx. pipiens	Wilton	19	GRVD	9/13/13	WNV	RTPCR
Sacramento	SAYO236002	5518	Cx. tarsalis	Rancho Murieta	29	CO2	9/13/13	WNV	RTPCR
Sacramento	SAYO243029	5626	Cx. pipiens	Elk Grove	33	CO2	9/17/13	WNV	RTPCR
Sacramento	SAYO253011	5497	Cx. pipiens	Galt	20	CO2	9/13/13	WNV	RTPCR
Sacramento	SAYO254024	5493	Cx. tarsalis	Galt	40	CO2	9/13/13	WNV	RTPCR
Sacramento	SAYO254024	5494	Cx. pipiens	Galt	40	CO2	9/13/13	WNV	RTPCR
San Bernardino	SANB47	470	Cx. quinquefasciatus	San Bernardino	36	GRVD	9/12/13	WNV	RTPCR
San Bernardino	SANB50	451	Cx. quinquefasciatus	Fontana	7	CO2	9/11/13	WNV	RTPCR
San Bernardino	WVAL2022	1135	Cx. quinquefasciatus	Fwy CA 60	24	GRVD	9/17/13	WNV	RTPCR
San Bernardino	WVAL5005	1126	Cx. quinquefasciatus	Rancho Cucamonga	50	GRVD	9/17/13	WNV	RTPCR
San Bernardino	WVAL6001	1123	Cx. quinquefasciatus	Ontario	25	GRVD	9/17/13	WNV	RTPCR
San Bernardino	WVAL6004	1108	Cx. quinquefasciatus	Ontario	15	GRVD	9/13/13	WNV	RTPCR
San Bernardino	WVAL6004	1109	Cx. quinquefasciatus	Ontario	22	GRVD	9/13/13	WNV	RTPCR
San Bernardino	WVAL6004	1111	Cx. quinquefasciatus	Ontario	50	GRVD	9/13/13	WNV	RTPCR
San Bernardino	WVAL6004	1113	Cx. quinquefasciatus	Ontario	50	GRVD	9/13/13	WNV	RTPCR
San Bernardino	WVAL6004	1114	Cx. quinquefasciatus	Ontario	50	GRVD	9/13/13	WNV	RTPCR
San Bernardino	WVAL6004	1116	Cx. quinquefasciatus	Ontario	23	GRVD	9/13/13	WNV	RTPCR
San Bernardino	WVAL6004	1147	Cx. quinquefasciatus	Ontario	39	GRVD	9/17/13	WNV	RTPCR
San Bernardino	WVAL6004	1153	Cx. quinquefasciatus	Ontario	50	GRVD	9/18/13	WNV	RTPCR

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San Bernardino	WVAL6004	1157	Cx. quinquefasciatus	Ontario	45	GRVD	9/18/13	WNV	RTPCR
San Bernardino	WVAL6009	1148	Cx. quinquefasciatus	Ontario	29	GRVD	9/17/13	WNV	RTPCR
San Joaquin	SJCM8003	1348	Cx. tarsalis	Tracy	18	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM8079	1343	Cx. pipiens	Manteca	50	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM8079	1344	Cx. pipiens	Manteca	50	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM8079	1345	Cx. pipiens	Manteca	50	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM8079	1346	Cx. pipiens	Manteca	40	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM8083	1400	Cx. pipiens	Escalon	30	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM8191	1374	Cx. pipiens	Lodi	5	CO2	9/17/13	WNV	RTPCR
San Joaquin	SJCM9906	1423	Cx. pipiens	French Camp	50	CO2	9/19/13	WNV	RTPCR
Sonoma	MARN118	1150	Cx. stigmatosoma	Cloverdale	5	GRVD	9/11/13	WNV	RTPCR
Sonoma	MARN79	1198	Cx. stigmatosoma	Santa Rosa	48	GRVD	9/17/13	WNV	RTPCR
Stanislaus	EAST1031	13334	Cx. pipiens	Kinghts Ferry	19	CO2	9/18/13	WNV	RAMP
Stanislaus	TRLK1225	916	Cx. pipiens	Turlock	50	CO2	9/17/13	WNV	RTPCR
Stanislaus	TRLK1309	969	Cx. pipiens	Hughson	50	CO2	9/17/13	WNV	RTPCR
Stanislaus	TRLK327	894	Cx. pipiens	Denair	17	CO2	9/12/13	WNV	RTPCR
Stanislaus	TRLK435	889	Cx. pipiens	Ceres	23	CO2	9/12/13	WNV	RTPCR
Stanislaus	TRLK435	977	Cx. pipiens	Ceres	16	CO2	9/17/13	WNV	RTPCR
Stanislaus	TRLK516	954	Cx. pipiens	Denair	50	CO2	9/17/13	WNV	RTPCR
Stanislaus	TRLK516	955	Cx. pipiens	Denair	50	CO2	9/17/13	WNV	RTPCR
Stanislaus	TRLK530	912	Cx. pipiens	Turlock	50	CO2	9/17/13	WNV	RTPCR
Tulare	DLTA7529	485	Cx. tarsalis	Visalia	25	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA7529	496	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA7529	497	Cx. quinquefasciatus	Visalia	50	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA8426	477	Cx. quinquefasciatus	Visalia	20	GRVD	9/17/13	WNV	RTPCR
Tulare	DLTA8507	486	Cx. quinquefasciatus	Visalia	25	CO2	9/18/13	WNV	RTPCR
Tulare	DLTA8534	469	Cx. quinquefasciatus	Visalia	25	GRVD	9/17/13	WNV	RTPCR
Tulare	DLTA9402	476	Cx. quinquefasciatus	Visalia	24	GRVD	9/17/13	WNV	RTPCR
Yolo	SAYO104006	5579	Cx. tarsalis	Dunnigan	50	CO2	9/13/13	WNV	RTPCR
Yolo	SAYO116002	5588	Cx. pipiens	Knights Landing	4	CO2	9/13/13	WNV	RTPCR
Yolo	SAYO123004	5568	Cx. tarsalis	Madison	12	CO2	9/13/13	WNV	RTPCR
Yolo	SAYO123004	5569	Cx. pipiens	Madison	1	GRVD	9/13/13	WNV	RTPCR
Yolo	SAYO125016	5738	Cx. tarsalis	Woodland	50	CO2	9/17/13	WNV	RTPCR
Yolo	SAYO125016	5739	Cx. tarsalis	Woodland	50	CO2	9/17/13	WNV	RTPCR
Yolo	SAYO135016	5413	Cx. tarsalis	Woodland	50	CO2	9/10/13	WNV	RTPCR
Yolo	SAYO135016	5735	Cx. tarsalis	Woodland	50	CO2	9/17/13	WNV	RTPCR
Yolo	SAYO145002	5722	Cx. pipiens	Davis	1	GRVD	9/17/13	WNV	RTPCR
Yolo	SAYO147013	5565	Cx. tarsalis	West Sacramento	37	CO2	9/13/13	WNV	RTPCR
Yolo	SAYO147013	5566	Cx. pipiens	West Sacramento	13	CO2	9/13/13	WNV	RTPCR

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04	Band 05
Butte	BUCO0003	Oroville	9/10/2013	WNV	1023	1025	1031		
Butte	BUCO0005	Honcut	9/10/2013	WNV	1047				
Contra Costa	CNTR8152	Knightsen	9/9/2013	WNV	1122				
Kern	DLNO0035		9/12/2013	WNV	1226	1228	1232		
Kern	DLNO0060	Delano	9/12/2013	WNV	1202	1210			
Kern	DLNO0060	Delano	8/29/2013	WNV	1209				
Los Angeles	ANTV2877	Lancaster	9/4/2013	WNV	3626	3628			
Los Angeles	GRLA2056	Long Beach	9/5/2013	WNV	2662	2664			
Los Angeles	GRLA2223	Rowland Heights	9/4/2013	WNV	2654				
Los Angeles	SGVA0007	Claremont	9/10/2013	WNV	3829	3830	3831	3832	
Nevada	NEVA2969	Auburn	9/11/2013	WNV	1654				
Placer	PLCR0672	Granite Bay	9/9/2013	WNV	1602	1606			
Santa Clara	STCL0031	Milpitas	9/9/2013	WNV	1740				
Shasta	SHAS0301	Redding	9/12/2013	WNV	1808				
Shasta	SHAS5038		9/12/2013	WNV	1817	1818	1819	1823	1824
Solano	SOLA0125	Cordelia	9/13/2013	WNV	1866	1870	1872		
Solano	SOLA0015	Winters	9/13/2013	WNV	1857				
Tehama	TEHA0001	Red Bluff	9/11/2013	WNV	1951	1960			
Tehama	TEHA0100	Corning	9/11/2013	WNV	1981				
Tehama	TEHA0066	Cottonwood	9/11/2013	WNV	1973				
Tulare	DLNO0021	Earlimart	9/12/2013	WNV	1216	1222	1224		
Tulare	DLTA8530	Visalia	9/6/2013	WNV	1195				
Yuba	SUYA0010	Olivehurst	9/12/2013	WNV	2017	2020			

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.

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