

## California Arbovirus Surveillance Bulletin #31

Week 39 Friday, October 2, 2015



### Weekly Update

#### **Humans**

**Forty-four new human cases of West Nile virus (WNV) illness were reported this week from the following 12 counties: Butte (4), Fresno (1), Glenn (2), Kern (2), Los Angeles (10), Orange (4), Riverside (5), San Bernardino (8), Santa Clara (3), Solano (1), Tehama (1), and Tulare (3). This is the first case reported from Solano County this year.** As of September 30, a total of 245 human cases of WNV illness have been reported to the California Department of Public Health from 28 counties; 12 were fatal. At this time last year, 375 cases had been reported from 28 counties. Of the 245 case-patients, 173 (71%) had neuroinvasive illness. The median age of the individuals is 57 years (range: 5-98 years); 145 (59%) are male. Dates of symptom onset ranged from May 15 to September 15. In addition, a total of 38 asymptomatic WNV-positive blood donors have been reported this year from: Butte (5), Fresno (4), Glenn (2), Kern (1), Los Angeles (11), Napa (1), Orange (2), Placer (1), Riverside (2), Sacramento (1), San Bernardino (4), Tehama (2) and Tulare (1), and Yolo (1).

#### **Dead Birds**

A total of 47 WNV positive dead birds were reported this week from the following 13 counties: Contra Costa (1), Los Angeles (4), Orange (10), Placer (1), Riverside (1), Sacramento (6), San Diego (10), San Mateo (2), Santa Clara (6), Solano (1), Sonoma (1), Ventura (2), and Yolo (2). In 2015, 1,014 birds have tested positive for WNV from 36 counties. At this time last year, 2,155 WNV positive birds had been detected in 35 counties.

#### **Mosquito Pools**

A total of 87 WNV positive mosquito pools were reported this week from the following 14 counties: Alameda (6), Fresno (5), Kings (4), Lake (1), Los Angeles (12), Orange (9), Riverside (4), Sacramento (3), San Bernardino (13), San Diego (18), San Joaquin (6), Stanislaus (2), Tulare (2), and Yolo (2). In 2015, 2,855 mosquito pools have tested positive for WNV from 29 counties, and 35 mosquito pools have tested positive for St. Louis encephalitis virus (SLEV) from one county (Riverside). At this time last year, 3,048 WNV mosquito pools had been reported from 29 counties.

#### **Sentinel Chickens**

A total of 16 WNV seroconversions were reported this week from 13 flocks located in the following 10 counties: Contra Costa (2), Glenn (1), Merced (3), Nevada (1), Sacramento (1), San Diego (2), Shasta (1), Solano (1), Sutter (1), and Yolo (3). These are the first WNV seroconversions detected in San Diego County this year. In addition, two SLEV seroconversions were reported from 2 flocks in Riverside County. In 2015, 330 WNV seroconversions have been detected among 83 flocks located in 22 counties and 5 SLEV seroconversions have been detected from 2 flocks in Riverside County. At this time last year, 361 WNV positive chickens had been reported from 85 flocks in 21 counties.

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<b>YTD WNV Activity by Element and County, 2015</b>				
County	Humans	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda		15	10	
Butte	47	38	94	37
Colusa	1	3		10
Contra Costa		9	6	16
El Dorado		3		
Fresno	4	3	105	
Glenn	19	4	21	9
Humboldt		2		
Kern	7	1	135	
Kings		3	143	
Lake	2	5	31	4
Los Angeles	34	42	175	62
Madera	2	1	20	
Marin	1	3		
Mendocino	1			
Merced		2	8	20
Napa		7		
Nevada	2	10		4
Orange	24	54	360	
Placer		21	49	8
Riverside	28	65	142	14
Sacramento	1	94	150	2
San Bernardino	19	23	237	25
San Diego	4	217	26	2
San Joaquin	2	16	204	
San Mateo		16	5	
Santa Barbara			1	
Santa Clara	6	185	19	5
Shasta	2	15	48	20
Siskiyou	1			
Solano	1	10	5	7
Sonoma		8	11	
Stanislaus	9	13	76	9
Sutter	2	16	54	36
Tehama	5			18
Trinity		2		
Tulare	7	22	526	
Ventura	1	21		5
Yolo	6	59	171	6
Yuba	7	6	23	11
<b>Totals</b>	<b>245</b>	<b>1,014</b>	<b>2,855</b>	<b>330</b>

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2014 & 2015 YTD West Nile Virus Comparisons		
	2014	2015
Total # Dead Bird Reports	12,602	9,236
# Positive Counties	38	40
# Human Cases	375	245
# Positive Dead Birds / # Tested	2,155 / 3,496	1,014 / 2,639
# Positive Mosquito Pools / # Tested	3,048 / 25,625	2,855 / 32,045
# Seroconversions / # Tested	361 / 12,313	330 / 10,414

## TESTING SUMMARIES

### Humans

		WNV	SLE	WEE
Human Cases	Week	44	0	0
	YTD	245	0	0

### Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	87	47
	YTD	2,639	1,014

### Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	469	16	2	0
	YTD	10,414	330	5	0
Mosquito Pools	Week	1,389	87	0	0
	YTD	32,045	2,855	35	0

## NEW POSITIVES

### Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Contra Costa	Contra Costa MVCD	Danville	94526	Western Scrub-Jay	9/27/2015	WNV
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Sherman Oaks	91403	American Crow	9/25/2015	WNV
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Sunland	91040	American Crow	9/24/2015	WNV
Los Angeles	San Gabriel Valley MVCD	San Dimas	91773	Sparrow	9/18/2015	WNV
Los Angeles	Ventura Co Env Health Dept	Westlake Village	91362	American Crow	9/22/2015	WNV
Orange	Orange Co VCD	Anaheim	92804	American Crow	9/23/2015	WNV
Orange	Orange Co VCD	Costa Mesa	92627	American Crow	9/24/2015	WNV
Orange	Orange Co VCD	Huntington Beach	92645	American Crow	9/22/2015	WNV
Orange	Orange Co VCD	Huntington Beach	92645	American Crow	9/22/2015	WNV
Orange	Orange Co VCD	Irvine	92606	American Crow	9/23/2015	WNV
Orange	Orange Co VCD	Orange	90867	American Crow	9/21/2015	WNV

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Orange	Orange Co VCD	Santa Ana	92705	American Crow	9/23/2015	WNV
Orange	Orange Co VCD	Santa Ana	92706	House Finch	9/23/2015	WNV
Orange	Orange Co VCD	Villa Park	92861	American Crow	9/18/2015	WNV
Orange	Orange Co VCD	Yorba Linda	92886	Western Bluebird	9/24/2015	WNV
Placer	Placer MVCD	Auburn	95602	Western Scrub-Jay	9/28/2015	WNV
Riverside	Northwest Mosquito VCD	Norco	92860	American Crow	9/22/2015	WNV
Sacramento	Sacramento-Yolo MVCD	Mather	95655	House Sparrow	9/23/2015	WNV
Sacramento	Sacramento-Yolo MVCD	Mather	95655	House Sparrow	9/23/2015	WNV
Sacramento	Sacramento-Yolo MVCD	Orangevale	95662	Bushtit	9/27/2015	WNV
Sacramento	Sacramento-Yolo MVCD	Rancho Cordova	95670	American Crow	9/23/2015	WNV
Sacramento	Sacramento-Yolo MVCD	Rancho Cordova	95742	Red-tailed Hawk	9/24/2015	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	House Finch	9/24/2015	WNV
San Diego	San Diego Co VCP	El Cajon	92020	American Crow	9/28/2015	WNV
San Diego	San Diego Co VCP	El Cajon	92020	American Crow	9/29/2015	WNV
San Diego	San Diego Co VCP	Escondido	92026	American Crow	9/28/2015	WNV
San Diego	San Diego Co VCP	Fallbrook	92028	American Crow	9/28/2015	WNV
San Diego	San Diego Co VCP	National City	91950	American Crow	9/29/2015	WNV
San Diego	San Diego Co VCP	Poway	92064	American Crow	9/27/2015	WNV
San Diego	San Diego Co VCP	San Diego	92101	American Crow	9/28/2015	WNV
San Diego	San Diego Co VCP	San Diego	92115	American Crow	9/29/2015	WNV
San Diego	San Diego Co VCP	San Diego	92122	American Crow	9/28/2015	WNV
San Diego	San Diego Co VCP	Santee	92071	American Crow	9/29/2015	WNV
San Mateo	San Mateo Co MAD	Atherton	94027	American Crow	9/30/2015	WNV
San Mateo	San Mateo Co MAD	Menlo Park	94025	American Crow	9/28/2015	WNV
Santa Clara	Santa Clara Co VCD	Campbell	95008	American Crow	9/24/2015	WNV
Santa Clara	Santa Clara Co VCD	Cupertino	95014	American Crow	9/23/2015	WNV
Santa Clara	Santa Clara Co VCD	Los Gatos	95032	American Crow	9/25/2015	WNV
Santa Clara	Santa Clara Co VCD	Mountain View	94043	American Crow	9/24/2015	WNV
Santa Clara	Santa Clara Co VCD	Palo Alto	94306	Western Scrub-Jay	9/25/2015	WNV
Santa Clara	Santa Clara Co VCD	Saratoga	95070	American Crow	9/24/2015	WNV
Solano	Solano Co MAD	Fairfield	94533	Western Scrub-Jay	10/2/2015	WNV
Sonoma	Marin-Sonoma MVCD	Windsor	95492	American Crow	9/25/2015	WNV
Ventura	Ventura Co Env Health Dept	Ojai	93023	American Crow	9/9/2015	WNV
Ventura	Ventura Co Env Health Dept	Simi Valley	93065	American Crow	9/9/2015	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95616	Western Scrub-Jay	9/22/2015	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95618	American Crow	9/25/2015	WNV

### Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Alameda	ALCO3025	204	Cx. pipiens	Hayward	8	CO2	9/25/2015	WNV
Alameda	ALCO3025	208	Cx. pipiens	Hayward	28	CO2	9/25/2015	WNV
Alameda	ALCO3025	212	Cx. pipiens	Hayward	11	CO2	9/25/2015	WNV
Alameda	ALCO3025	213	Cx. tarsalis	Hayward	51	CO2	9/25/2015	WNV
Alameda	ALCO3025	220	Cx. tarsalis	Hayward	20	CO2	9/29/2015	WNV
Alameda	ALCO3033	195	Cx. pipiens	San Lorenzo	42	CO2	9/25/2015	WNV
Fresno	FRWS3201	273	Cx. quinquefasciatus	Firebaugh	50	GRVD	9/29/2015	WNV
Fresno	FRWS400010	275	Cx. tarsalis	Mendota	50	CO2	9/29/2015	WNV
Fresno	FRWS4102	282	Cx. tarsalis	Kerman	50	CO2	9/29/2015	WNV
Fresno	FRWS4102	284	Cx. tarsalis	Kerman	50	CO2	9/29/2015	WNV

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Fresno	FRWS4102	286	Cx. quinquefasciatus	Kerman	50	CO2	9/29/2015	WNV
Kings	KNGS4401	555	Cx. pipiens	Lemoore	50	BGSENT	9/23/2015	WNV
Kings	KNGS4501	541	Cx. pipiens		19	BGSENT	9/17/2015	WNV
Kings	KNGS5516	558	Cx. tarsalis	Hanford	13	BGSENT	9/24/2015	WNV
Kings	KNGS5516	559	Cx. pipiens	Hanford	50	BGSENT	9/24/2015	WNV
Lake	LAKE315	606	Cx. thriambus	Kelseyville	5	CO2	9/24/2015	WNV
Los Angeles	GRLA2030	5824	Cx. quinquefasciatus	West Hills	32	GRVD	9/25/2015	WNV
Los Angeles	GRLA2438	5827	Cx. quinquefasciatus	Chatsworth	24	CO2	9/25/2015	WNV
Los Angeles	GRLA2465	5809	Cx. quinquefasciatus	Los Feliz	50	GRVD	9/22/2015	WNV
Los Angeles	GRLA2500	5813	Cx. quinquefasciatus	Los Angeles	26	GRVD	9/22/2015	WNV
Los Angeles	GRLA2511	5816	Cx. quinquefasciatus	Los Angeles	35	GRVD	9/22/2015	WNV
Los Angeles	GRLA2512	5817	Cx. quinquefasciatus	Los Angeles	19	GRVD	9/22/2015	WNV
Los Angeles	GRLA2554	5820	Cx. quinquefasciatus	Winnetka	28	CO2	9/25/2015	WNV
Los Angeles	GRLA2724	5821	Cx. quinquefasciatus	Canoga Park	41	GRVD	9/25/2015	WNV
Los Angeles	GRLA3036	5825	Cx. quinquefasciatus	Canoga Park	50	GRVD	9/25/2015	WNV
Los Angeles	GRLA3078	5815	Cx. quinquefasciatus	Los Feliz	31	CO2	9/22/2015	WNV
Los Angeles	LACW1009	184	Cx. quinquefasciatus	Los Angeles	30	GRVD	9/22/2015	WNV
Los Angeles	SGVA938	373	Cx. quinquefasciatus	Alhambra	4	CO2	9/29/2015	WNV
Orange	ORCO1005	3640	Cx. quinquefasciatus	Buena Park	19	GRVD	9/24/2015	WNV
Orange	ORCO1005	3643	Cx. quinquefasciatus	Buena Park	28	GRVD	9/24/2015	WNV
Orange	ORCO1005	3644	Cx. quinquefasciatus	Buena Park	27	GRVD	9/24/2015	WNV
Orange	ORCO1015	3648	Cx. quinquefasciatus	Orange	35	GRVD	9/24/2015	WNV
Orange	ORCO1015	3654	Cx. quinquefasciatus	Orange	50	GRVD	9/24/2015	WNV
Orange	ORCO1025	3676	Cx. quinquefasciatus	Costa Mesa	9	GRVD	9/24/2015	WNV
Orange	ORCO216	3678	Cx. quinquefasciatus	Orange	13	GRVD	9/24/2015	WNV
Orange	ORCO235	3672	Cx. quinquefasciatus	Stanton	8	GRVD	9/24/2015	WNV
Orange	ORCO6	3664	Cx. quinquefasciatus	Irvine	9	GRVD	9/24/2015	WNV
Riverside	COAV203	3086	Cx. quinquefasciatus	Palm Desert	10	GRVD	10/1/2015	WNV
Riverside	COAV327	3057	Cx. tarsalis	Desert Hot Springs	50	CO2	9/29/2015	WNV
Riverside	NWST140	232	Cx. quinquefasciatus	Riverside	30	CO2	9/22/2015	WNV
Riverside	NWST9226	239	Cx. quinquefasciatus		28	CO2	9/24/2015	WNV
Sacramento	SAYO203011	5805	Cx. tarsalis	Antelope	19	CO2	9/25/2015	WNV
Sacramento	SAYO233025	6016	Cx. pipiens	Elk Grove	50	CO2	9/29/2015	WNV
Sacramento	SAYO242010	5987	Cx. pipiens	Elk Grove	50	CO2	9/29/2015	WNV
San Bernardino	WVAL1009	1541	Cx. quinquefasciatus	Ontario	25	GRVD	9/25/2015	WNV
San Bernardino	WVAL2004	1572	Cx. quinquefasciatus	Chino	15	CO2	9/30/2015	WNV
San Bernardino	WVAL2004	1574	Cx. stigmatosoma	Chino	6	CO2	9/30/2015	WNV
San Bernardino	WVAL2005	1594	Cx. quinquefasciatus	Chino	50	CO2	9/30/2015	WNV
San Bernardino	WVAL2006	1586	Cx. tarsalis	Chino	50	CO2	9/30/2015	WNV
San Bernardino	WVAL2021	1555	Cx. quinquefasciatus	Fwy CA 71	9	GRVD	9/30/2015	WNV
San Bernardino	WVAL2022	1554	Cx. quinquefasciatus	Fwy CA 60	10	GRVD	9/30/2015	WNV
San Bernardino	WVAL5006	1538	Cx. quinquefasciatus	Rancho Cucamonga	26	GRVD	9/29/2015	WNV
San Bernardino	WVAL5007	1526	Cx. quinquefasciatus	Rancho Cucamonga	12	GRVD	9/29/2015	WNV
San Bernardino	WVAL6002	1519	Cx. stigmatosoma	Ontario	40	CO2	9/29/2015	WNV
San Bernardino	WVAL6004	1508	Cx. quinquefasciatus	Ontario	21	GRVD	9/29/2015	WNV
San Bernardino	WVAL7002	1539	Cx. quinquefasciatus	Montclair	6	GRVD	9/25/2015	WNV
San Bernardino	WVAL7002	1548	Cx. quinquefasciatus	Montclair	15	GRVD	9/30/2015	WNV
San Diego	SAND10040	127	Cx. quinquefasciatus	San Diego	11	GRVD	7/16/2015	WNV
San Diego	SAND10049	143	Cx. quinquefasciatus	Santee	9	GRVD	7/21/2015	WNV
San Diego	SAND10076	153	Cx. quinquefasciatus	Santee	8	GRVD	7/29/2015	WNV
San Diego	SAND10154	217	Cx. quinquefasciatus		42	GRVD	8/19/2015	WNV
San Diego	SAND10157	207	Cx. stigmatosoma	Valley Center	6	GRVD	8/18/2015	WNV

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San Diego	SAND10170	229	Cx. quinquefasciatus	Del Mar	11	GRVD	8/26/2015	WNV
San Diego	SAND10172	232	Cx. quinquefasciatus	Encinitas	26	GRVD	8/26/2015	WNV
San Diego	SAND10218	245	Cx. quinquefasciatus	Santee	23	GRVD	9/9/2015	WNV
San Diego	SAND193	222	Cx. quinquefasciatus	Del Mar	25	GRVD	8/25/2015	WNV
San Diego	SAND211	261	Cx. quinquefasciatus	San Diego	46	GRVD	9/15/2015	WNV
San Diego	SAND211	262	Cx. stigmatosoma	San Diego	5	GRVD	9/15/2015	WNV
San Diego	SAND331	233	Cx. quinquefasciatus	San Diego	11	GRVD	9/2/2015	WNV
San Diego	SAND36	260	Cx. quinquefasciatus	Kearny Mesa	23	GRVD	9/15/2015	WNV
San Diego	SAND369	214	Cx. quinquefasciatus	Chula Vista	19	GRVD	8/19/2015	WNV
San Diego	SAND450	147	Cx. stigmatosoma	El Cajon	20	GRVD	7/23/2015	WNV
San Diego	SAND65	255	Cx. quinquefasciatus	Allied Gardens	5	GRVD	9/9/2015	WNV
San Diego	SAND65	256	Cx. stigmatosoma	Allied Gardens	8	GRVD	9/9/2015	WNV
San Diego	SAND72	254	Cx. quinquefasciatus	Santee	11	GRVD	9/9/2015	WNV
San Joaquin	SJCM7001	2572	Cx. pipiens	Ripon	5	GRVD	9/29/2015	WNV
San Joaquin	SJCM8075	2646	Cx. tarsalis	Lodi	2	CO2	10/1/2015	WNV
San Joaquin	SJCM8106	2553	Cx. tarsalis	Escalon	5	CO2	9/29/2015	WNV
San Joaquin	SJCM8106	2554	Cx. pipiens	Escalon	29	CO2	9/29/2015	WNV
San Joaquin	SJCM8160	2590	Cx. tarsalis	Lodi	50	CO2	9/29/2015	WNV
San Joaquin	SJCM8161	2549	Cx. pipiens	Ripon	50	CO2	9/29/2015	WNV
Stanislaus	TRLK1315	1618	Cx. pipiens	Patterson	50	CO2	9/24/2015	WNV
Stanislaus	TRLK1418	1771	Cx. pipiens	Turlock	50	CO2	9/29/2015	WNV
Tulare	DLTA6408	1692	Cx. quinquefasciatus	Dinuba	45	GRVD	9/29/2015	WNV
Tulare	DLTA7502	1686	Cx. quinquefasciatus	Seville	34	GRVD	9/29/2015	WNV
Yolo	SAYO136010	5921	Cx. tarsalis	Woodland	5	GRVD	9/25/2015	WNV
Yolo	SAYO145003	5969	Cx. pipiens	Davis	2	CO2	9/29/2015	WNV

**Sentinel Chickens**

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Contra Costa	CNTR7402	Oakley	9/21/2015	WNV	1112	1113
Glenn	GLEN9701	Willows	9/23/2015	WNV	1339	
Merced	MERC0012	Gustine	9/24/2015	WNV	1802	
Merced	MERC0016	Merced	9/24/2015	WNV	1859	
Merced	MERC0502	Hilmar	9/24/2015	WNV	1839	
Nevada	NEVA0002	Grass Valley	9/23/2015	WNV	2443	
Riverside	COAV0122	Mecca	8/31/2015	SLEV	2553	
Riverside	COAV0035	Mecca	9/14/2015	SLEV	2545	
Sacramento	SAYO236001	Rancho Murieta	9/10/2015	WNV	4457	
San Diego	SAND0450	El Cajon	9/15/2015	WNV	1991	
San Diego	SAND0057	Sorrento Valley	9/15/2015	WNV	1985	
Shasta	SHAS9702	Millville	9/24/2015	WNV	1573	
Solano	SOLA0050	Fairfield	9/25/2015	WNV	1632	
Sutter	SUYA0014	Sutter	9/24/2015	WNV	2249	
Yolo	SAYO116006	Knights Landing	9/10/2015	WNV	4470	
Yolo	SAYO116006	Knights Landing	9/24/2015	WNV	4467	4468

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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.

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**Dead Birds**

Oral swab samples from corvids are collected onto RNA preservation 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. Some local agencies test birds using the RAMP© test or conduct RT-PCR on tissue samples.

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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, and St. Louis encephalitis viruses by EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

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**Mosquito Pools:**

Mosquito pools are submitted to CVEC and screened for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a Taqman multiplex RT-PCR. CVEC no longer performs confirmatory 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.

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