

California Arbovirus Surveillance Bulletin # 32

Week 37 Monday, September 21, 2009

Weekly Summary

WEEKLY COMMENTS



As of September 18, 2009, 41 counties have reported West Nile virus (WNV) activity. At this time last year, 41 counties had reported WNV activity.

Humans

Thirteen new cases of West Nile virus were reported last week from the following 8 counties: El Dorado (1), Fresno (2), Kern (1), Kings (1), Los Angeles (2), Merced (1), San Joaquin (1), and Stanislaus (4). These are the first human cases reported from El Dorado and Merced counties this year. In 2009, 47 human cases of West Nile virus have been identified in 12 counties: Butte (1), Contra Costa (1), El Dorado (1), Fresno (7), Kern (11), Kings (2), Los Angeles (9), Merced (1), Orange (1), San Diego (2), San Joaquin (2), and Stanislaus (9). Of the 47 individuals, 25 (53%) developed neuroinvasive symptoms. The median age of the 47 individuals is 53 years (range: 15-84 years), and 31 (66%) are male. Two fatalities have been reported in Fresno (1) and Merced (1) counties. In addition, 15 WNV-positive blood donation samples have been reported this year; 5 of the individuals developed symptoms and were reclassified as cases. At this time last year, 198 human cases had been reported from 22 counties.

Horses

One new equine case of WNV was reported last week from Sacramento County; this is the first WNV positive horse reported from Sacramento County this year. In 2009, 9 equine cases of WNV have been reported from 7 counties; 4 of the cases were euthanized as a result of their illness. At this time last year, 15 equine WNV cases had been reported from 10 counties.

Dead Birds & Tree Squirrels

Fifteen WNV positive dead birds were reported last week from the following 10 counties: Amador (1), Butte (1), Contra Costa (3), Fresno (1), Sacramento (4), San Bernardino (1), San Diego (1), San Joaquin (1), Stanislaus (1), and Yolo (1). This is the first indication of WNV activity in Amador County this year. In 2009, 420 birds from 35 counties have tested positive for WNV. At this time last year, 1,813 WNV positive dead birds had been reported from 39 counties.

No positive tree squirrels were reported last week. In 2009, 6 tree squirrels from 6 counties have tested positive for WNV. At this time last year, 17 WNV positive tree squirrels had been reported from 4 counties.

Mosquito Pools

Fifty-nine WNV positive mosquito pools were reported last week from the following 16 counties: Fresno (6), Imperial (1), Kern (3), Los Angeles (7), Madera (1), Merced (4), Orange (3), Placer (4), Riverside (4), Sacramento (2), San Bernardino (4), San Diego (1), San Joaquin (2), Stanislaus (12), Sutter (2), and Tulare (3). In 2009, 967 mosquito pools have tested positive for WNV from 27 counties. At this time last year, 1,628 WNV positive mosquito pools had been reported from 25 counties.

Sentinel Chickens

Thirty-two WNV seroconversions were reported last week from the following 7 counties: Fresno (10), Imperial (3), Los Angeles (8), Merced (2), Riverside (5), San Bernardino (1), and Tulare (3). In 2009, 255 chickens from 18 counties have tested positive for WNV antibodies. At this time last year, 196 WNV seroconversions had been reported from 16 counties.

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.

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YTD WNV Activity by Element and County, 2009

County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			10	1		
Amador			1			
Butte	1		12	4	13	
Colusa			2			
Contra Costa	1	1	31	17	5	1
El Dorado	1		9			
Fresno	7		61	124	11	1
Glenn			4			
Imperial				3	34	
Kern	11		27	127	63	1
Kings	2		9	97		
Lake			2	2		
Los Angeles	9	1	60	68	31	
Madera			11	3		
Merced	1		4	8	7	
Modoc			1			
Mono				1		
Monterey			3			
Napa					3	
Orange	1		6	10		
Placer			4	39		
Riverside			1	24	19	
Sacramento		1	21	36	2	
San Bernardino			13	44	8	1
San Diego	2		28	5	4	
San Francisco			1			
San Joaquin	2	2	22	78	9	
San Mateo			1			
Santa Barbara			1			
Santa Clara			11	14		1
Santa Cruz			1			
Shasta		1	6	2		
Solano		1	2	2	5	
Stanislaus	9	2	24	88	14	
Sutter				25	5	
Tehama						1
Tulare			22	128	20	
Tuolumne			2			
Ventura			2			
Yolo			5	16	2	
Yuba				1		
Total	47	9	420	967	255	6

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2009 & 2008 YTD West Nile Virus Comparisons		
	2008	2009
Total # Dead Bird Reports	27,024	13,399
# Positive Counties	41	41
# Human Cases / # Tested	198 / 761	47 / 728
# Horse Cases / # Tested	15/ 174	9 / 153
# Positive Dead Birds / # Tested	1,813 /4,641	420 / 2,347
# Positive Mosquito Pools / # Tested	1,628 / 24,353	967 / 21,331
# Positive Chicken Sera / # Tested	196 / 22,182	255 / 18,778
# Positive Squirrels / # Tested	17 / 221	6 / 81

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE		Other	
			Imported	Local	Imported	Local	Imported	Local	Imported	Local
Humans Tested*	Week	22	0	13	0	0	0	0	0	0
	YTD	728	1	46	0	0	0	0	0	0
Horses Tested	Week	4	0	1	0	0	0	0	0	0
	YTD	153	0	9	0	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive
Dead Birds	Week	58	15
	YTD	2,347	420
Tree Squirrels	Week	1	0
	YTD	81	6

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	794	32	0	0
	YTD	18,778	255	0	0
Mosquito Pools: RT-PCR	Week	746	53	0	0
	YTD	20,443	902	0	0
Mosquito Pools: RAMP	Week	116	6	N/A	N/A
	YTD	888	65	N/A	N/A

POSITIVES

Dead Birds & Tree Squirrels

County	Submitting Agency	City	Zip	Species	Reported	Tested	Virus	Method
Amador	Amador Co Dept of Agriculture	Jackson	95642	Western Bluebird	9/3/2009	9/14/2009	WNV	RT-PCR
Butte	Butte Co MVCD	Chico	95928	Western Scrub-Jay	9/8/2009	9/14/2009	WNV	RT-PCR
				Western Scrub-Jay	9/8/2009	9/14/2009	WNV	RT-PCR
Contra Costa	Contra Costa MVCD	Brentwood	94513	American Crow	9/10/2009	9/10/2009	WNV	RAMP
Contra Costa	Contra Costa MVCD	Byron	94514	American Crow	9/15/2009	9/16/2009	WNV	RAMP
Fresno	Consolidated MAD	Kingsburg	93631	American Crow	9/10/2009	9/11/2009	WNV	RAMP
Sacramento	Sacramento-Yolo MVCD	Antelope	95843	American Robin	9/4/2009	9/14/2009	WNV	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Galt	95632	American Crow	9/2/2009	9/14/2009	WNV	RT-PCR

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Sacramento	Sacramento-Yolo MVCD	Sacramento	95827	American Crow	9/2/2009	9/14/2009	WNV	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95820	American Crow	9/4/2009	9/14/2009	WNV	RT-PCR
San Bernardino	West Valley MVCD	Chino	91710	American Crow	9/3/2009	9/14/2009	WNV	RT-PCR
San Diego	San Diego Co VCP	San Diego	92130	American Crow	9/8/2009	9/10/2009	WNV	RT-PCR
San Joaquin	San Joaquin Co MVCD	Acampo	95220	Western Scrub-Jay	9/8/2009	9/14/2009	WNV	RT-PCR
Stanislaus	Turlock MAD	Turlock	95380	Northern Mockingbird	9/4/2009	9/14/2009	WNV	RT-PCR
Yolo	Sacramento-Yolo MVCD	Woodland	95695	American Crow	8/29/2009	9/14/2009	WNV	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in Pool	Collected	Tested	City	Virus	Method
Fresno	CNSL1689	376	Cx quinquefasciatus	18	9/2/2009	9/16/2009	Clovis	WNV	RTPCR
Fresno	CNSL4146	680	Cx quinquefasciatus	50	9/15/2009	9/16/2009	Fresno	WNV	RTPCR
Fresno	FRNO0053	54	Cx tarsalis	50	9/17/2009	9/18/2009	Fresno	WNV	RAMP
Fresno	FRNO0053	55	Cx tarsalis	21	9/17/2009	9/18/2009	Fresno	WNV	RAMP
Fresno	FRWS4102	203	Cx tarsalis	50	9/16/2009	9/17/2009	Kerman	WNV	RTPCR
Fresno	FRWS4102	205	Cx tarsalis	27	9/16/2009	9/17/2009	Kerman	WNV	RTPCR
Imperial	COAV5002	1550	Cx tarsalis	50	9/9/2009	9/16/2009	Niland	WNV	RTPCR
Kern	KERN0009	553	Cx quinquefasciatus	33	9/10/2009	9/16/2009	Bakersfield	WNV	RTPCR
Kern	KERN0013	540	Cx quinquefasciatus	50	9/9/2009	9/16/2009	Bakersfield	WNV	RTPCR
Kern	KERN0036	545	Cx tarsalis	50	9/9/2009	9/16/2009	Bakersfield	WNV	RTPCR
Los Angeles	GRLA2094	1642	Cx quinquefasciatus	50	9/11/2009	9/18/2009	Whittier	WNV	RTPCR
Los Angeles	GRLA2097	1638	Cx quinquefasciatus	50	9/11/2009	9/17/2009	La Mirada	WNV	RTPCR
Los Angeles	GRLA2614	5963	Cx quinquefasciatus	50	9/11/2009	9/17/2009	Newhall	WNV	RTPCR
Los Angeles	GRLA2890	1660	Cx quinquefasciatus	50	9/11/2009	9/17/2009	Lakewood	WNV	RTPCR
Los Angeles	GRLA2891	1657	Cx quinquefasciatus	50	9/11/2009	9/17/2009	Hawaiian Gardens	WNV	RTPCR
Los Angeles	GRLA3051	1664	Cx quinquefasciatus	40	9/11/2009	9/18/2009	Signal Hill	WNV	RTPCR
Los Angeles	LACW1049	430	Cx quinquefasciatus	50	9/9/2009	9/16/2009	Inglewood	WNV	RTPCR
Madera	MADR6345	28	Cx tarsalis	35	9/16/2009	9/17/2009	Madera	WNV	RTPCR
Merced	MERC0401	153	Cx pipiens	19	9/9/2009	9/15/2009	Hilmar	WNV	RTPCR
Merced	MERC0404	132	Cx pipiens	50	9/9/2009	9/15/2009	Hilmar	WNV	RTPCR
Merced	MERC0404	138	Cx pipiens	46	9/9/2009	9/15/2009	Hilmar	WNV	RTPCR
Merced	MERC0409	177	Cx tarsalis	50	9/10/2009	9/15/2009	Los Banos	WNV	RTPCR
Orange	ORCO0032	1161	Cx quinquefasciatus	28	9/10/2009	9/11/2009	Anaheim	WNV	RTPCR
Orange	ORCO0050	1162	Cx quinquefasciatus	50	9/10/2009	9/11/2009	Buena Park	WNV	RTPCR
Orange	ORCO0082	1173	Cx quinquefasciatus	50	9/10/2009	9/11/2009	Cypress	WNV	RTPCR
Placer	PLCR0032	893	Cx tarsalis	16	9/15/2009	9/16/2009	Lincoln	WNV	RTPCR
Placer	PLCR0033	894	Cx tarsalis	11	9/15/2009	9/16/2009	Lincoln	WNV	RTPCR
Placer	PLCR0519	908	Cx pipiens	13	9/15/2009	9/16/2009	Roseville	WNV	RTPCR
Placer	PLCR2021	804	Ae vexans	24	9/2/2009	9/15/2009	Sheridan	WNV	RTPCR
Riverside	COAV0033	1570	Cx tarsalis	50	9/15/2009	9/16/2009	Mecca	WNV	RTPCR
Riverside	COAV0034	1558	Cx tarsalis	50	9/15/2009	9/16/2009	Mecca	WNV	RTPCR
Riverside	COAV0034	1562	Cx tarsalis	50	9/15/2009	9/16/2009	Mecca	WNV	RTPCR
Riverside	NWST0099	9219	Cx quinquefasciatus	41	9/2/2009	9/16/2009	Norco	WNV	RTPCR
Sacramento	SAYO4220	3810	Cx pipiens	10	9/11/2009	9/14/2009	Rancho Cordova	WNV	RTPCR
Sacramento	SAYO4369	3853	Cx tarsalis	18	9/11/2009	9/14/2009	Galt	WNV	RTPCR
San Bernardino	SANB0008	396	Cx quinquefasciatus	15	8/26/2009	9/17/2009	Upland	WNV	RTPCR
San Bernardino	WVAL1008	911	Cx quinquefasciatus	50	9/9/2009	9/15/2009	Ontario	WNV	RTPCR
San Bernardino	WVAL6002	920	Cx quinquefasciatus	38	9/9/2009	9/15/2009	Ontario	WNV	RTPCR
San Bernardino	WVAL6005	900	Cx quinquefasciatus	29	9/9/2009	9/15/2009	Ontario	WNV	RTPCR
San Diego	SAND0288	102	Cx quinquefasciatus	14	9/11/2009	9/16/2009	Escondido	WNV	RTPCR
San Joaquin	SJCM8083	913	Cx pipiens	42	9/10/2009	9/11/2009	Escalon	WNV	RAMP
San Joaquin	SJCM8157	969	Cx tarsalis	24	9/17/2009	9/18/2009	Manteca	WNV	RAMP
Stanislaus	EAST1044	9246	Cx pipiens	50	9/17/2009	9/18/2009	Empire	WNV	RAMP
Stanislaus	EAST1075	9226	Cx tarsalis	10	9/17/2009	9/18/2009	Riverbank	WNV	RAMP

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Stanislaus	TRLK0406	1062	Cx pipiens	29	9/15/2009	9/17/2009	Turlock	WNV	RTPCR
Stanislaus	TRLK0408	1068	Cx pipiens	50	9/15/2009	9/16/2009	Turlock	WNV	RTPCR
Stanislaus	TRLK0432	1074	Cx pipiens	50	9/15/2009	9/18/2009	Turlock	WNV	RTPCR
Stanislaus	TRLK0516	1107	Cx pipiens	50	9/15/2009	9/16/2009	Denair	WNV	RTPCR
Stanislaus	TRLK0516	1110	Cx pipiens	50	9/15/2009	9/16/2009	Denair	WNV	RTPCR
Stanislaus	TRLK0516	1116	Cx pipiens	50	9/15/2009	9/16/2009	Denair	WNV	RTPCR
Stanislaus	TRLK0531	1058	Cx tarsalis	50	9/15/2009	9/16/2009	Turlock	WNV	RTPCR
Stanislaus	TRLK0536	1070	Cx pipiens	50	9/15/2009	9/17/2009	Turlock	WNV	RTPCR
Stanislaus	TRLK0536	1071	Cx pipiens	50	9/15/2009	9/16/2009	Turlock	WNV	RTPCR
Stanislaus	TRLK0613	1134	Cx pipiens	50	9/15/2009	9/16/2009	Hickman	WNV	RTPCR
Sutter	SUYA0022	311	Cx tarsalis	25	9/8/2008	9/16/2009	Tudor	WNV	RTPCR
Sutter	SUYA0030	314	Cx pipiens	30	9/8/2009	9/16/2009	Live Oak	WNV	RTPCR
Tulare	DLTA6408	841	Cx quinquefasciatus	50	9/11/2009	9/16/2009	Dinuba	WNV	RTPCR
Tulare	DLTA6408	842	Cx quinquefasciatus	47	9/11/2009	9/16/2009	Dinuba	WNV	RTPCR
Tulare	DLTA6408	847	Cx quinquefasciatus	36	9/11/2009	9/16/2009	Dinuba	WNV	RTPCR

Sentinel Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04	Band 05
Fresno	FRNO0012	Fresno	9/8/2009	WNV	2000	2003	2005	3753	3754
Fresno	FRNO0004	Kerman	9/8/2009	WNV	3749				
Fresno	FRWS5101	Mendota Airport	9/8/2009	WNV	2869	2871	2872	2875	
Imperial	COAV5001	Niland	8/24/2009	WNV	3194				
Imperial	COAV5001	Niland	9/8/2009	WNV	3191				
Imperial	COAV5002	Niland	9/8/2009	WNV	3199				
Los Angeles	ANTV2667	Palmdale	9/9/2009	WNV	3380				
Los Angeles	ANTV3247	Lancaster	9/9/2009	WNV	3365				
Los Angeles	ANTV5662	Lancaster	9/9/2009	WNV	3399	3402			
Los Angeles	ANTV7945	Quartz Hill	9/9/2009	WNV	3378				
Los Angeles	ANTV7947	Palmdale	8/26/2009	WNV	3394				
Los Angeles	GRLA2223	Rowland Heights	9/8/2009	WNV	2804	2810			
Merced	MERC0502	Hilmar	9/4/2009	WNV	2269				
Merced	MERC0006	Merced	8/21/2009	WNV	2261				
Riverside	COAV0122	Mecca	9/8/2009	WNV	3139	3142			
Riverside	COAV0035	Mecca	9/8/2009	WNV	3130	3131	3134		
San Bernardino	SANB0001	Needles	9/8/2009	WNV	1682				
Tulare	DLTA6309	Reedley	9/8/2009	WNV	2927				
Tulare	DLTA8530	Visalia	9/8/2009	WNV	2943	2945			

NATIONAL COMMENTS

As of September 15, 2009, 280 human cases had been reported nationwide in the following 30 states: Arizona (15), Arkansas (1), California (34), Colorado (51), Georgia (2), Idaho (8), Illinois (1), Indiana (1), Iowa (2), Kansas (4), Kentucky (1), Louisiana (12), Minnesota (1), Mississippi (34), Missouri (1), Montana (3), Nebraska (14), Nevada (12), New Mexico (3), New York (1), North Dakota (1), Ohio (1), Oklahoma (4), Pennsylvania (1), South Carolina (1), South Dakota (12), Tennessee (2), Texas (40), Washington (10), and Wyoming (7). Of the 280 individuals, 136 (49%) have neuroinvasive illness. The median age of the 280 individuals is 55 years (range: 2-91 years); 59% are male. There have been eight fatalities in Idaho (1), Indiana (1), Mississippi (2), New Mexico (1), Texas (2), and Wyoming (1).

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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 by plaque reduction neutralization test (PRNT).

*Human denominator data only includes specimens tested at VRDL and does not include additional negative specimens that are tested by local agencies only.

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. The WNV Dead Bird Surveillance Coordinator, Erin Parker, can be reached directly at (510) 412-6254.

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 (WEE), and St. Louis encephalitis (SLE) 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 WEE, SLE, 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.

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