

California Arbovirus Surveillance Bulletin # 30

Week 37 Monday, September 20, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

Seven new human cases of West Nile virus (WNV) were reported last week from Fresno (5) and Placer (2) counties. In addition, one asymptomatic WNV infection in a blood donor was reported from Merced County. To date this year, 45 WNV cases have been reported from 11 counties. Of the 45 individuals, 24 (53%) developed neuroinvasive disease. The median age for all cases for which data are available is 45 years (range: 17-89 years); 20 (45%) are male. One fatality has been reported from Fresno County. At this time last year, 47 human cases had been reported from 12 counties.

Horses

No new horse cases were reported last week. In 2010, 14 horses from 9 counties have tested positive for WNV infection and 4 fatalities have been reported. At this time last year, 9 horse cases of WNV had been reported from 7 counties.

Dead Birds & Squirrels

Twenty three recently-infected* WNV positive dead birds were reported last week from the following 10 counties: Alameda (1), Butte (2), Los Angeles (2), Madera (2), Merced (1), Orange (6), Sacramento (3), Stanislaus (3), Tulare (1), and Yolo (2). This is the first detection of WNV activity in Alameda County this year. Six additional birds from six counties tested positive for chronic infection with WNV. One WNV positive tree squirrel was reported last week from San Mateo County.

In 2010, 333 recently-infected* WNV positive dead birds have been reported from 25 counties, and 14 WNV positive squirrels have been reported from 7 counties. An additional 126 chronic WNV infections have been detected in birds from 26 counties (see www.westnile.ca.gov for more details). At this time last year, 420 birds from 35 counties and 6 tree squirrels from 6 counties had tested positive for WNV. Year-to-date totals from last year and previous years include both recent and chronic infections.

**In 2010, The University of California, Center for Vectorborne Diseases (CVEC) and the California Department of Public Health, Vector-Borne Disease Section began differentiating between chronic and acute infections in West Nile virus positive dead birds. Birds considered to have chronic infection with WNV are unlikely to have been infected recently with WNV and have limited surveillance utility.*

Mosquito Pools

Last week, 61 WNV positive mosquito pools were reported from the following 13 counties: Contra Costa (2), Fresno (3), Kern (12), Kings (4), Los Angeles (5), Riverside (1), Sacramento (6), San Bernardino (4), San Joaquin (2), Stanislaus (16), Sutter (3), Tulare (1), and Yolo (2). In 2010, 1,159 mosquito pools from 23 counties have tested positive for WNV. At this time last year, 967 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

Last week, 42 WNV seroconversions were reported in 18 flocks from the following 9 counties: Contra Costa (2), Kern (18), Madera (4), Merced (4), Placer (1), Riverside (4), San Bernardino (2), Solano (1), and Tulare (6). These are the first WNV positive chickens reported from Contra Costa, Merced, and Solano counties this year. In 2010, 190 WNV positive chickens have been detected among 48 flocks within 19 counties. At this time last year, 255 WNV positive chickens from 18 counties had been reported.

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2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	13,399	9,059
# Positive Counties	41	34
# Human Cases	47	45
# Horse Cases	9	14
# Positive Dead Birds / # Tested	420 / 2,347	333 / 1,809
# Positive Mosquito Pools / # Tested	967 / 21,331	1,159 / 24,406
# Seroconversions / # Tested	255 / 18,778	190 / 20,185
# Positive Squirrels / # Tested	6 / 81	14 / 80

YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds [^]	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			1			
Amador		1				
Butte	1		6	5	2	1
Colusa			1		4	
Contra Costa			4	3	2	
El Dorado			2			
Fresno	16	1	19	117	4	2
Glenn			3			
Imperial				10	12	
Kern	3	1	11	249	66	
Kings				54		
Lake				2		
Los Angeles	1		26	44	2	1
Madera	3	5	13	9	6	
Merced			14	5	4	
Mono			1			
Orange			12	14		
Placer	3		6	33	3	
Riverside				67	34	
Sacramento	5	2	95	185	4	2
San Bernardino	1		3	31	9	1
San Diego			2	1		
San Joaquin	2	1	26	39		
San Mateo						3
Santa Clara			25	10		4
Santa Cruz			4			
Shasta			2			
Solano		1			1	
Stanislaus	8	1	31	75	8	
Sutter			1	30	11	
Tehama					1	
Tulare	2	1	17	167	14	
Yolo			8	7		
Yuba				2	3	
Totals	45	14	333	1,159	190	14

[^] Chronic infections are not included in county totals.

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TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE	
			Local	Imported	Local	Imported	Local	Imported
Humans Tested*	Week	30	7	0	0	0	0	0
	YTD	531	45	0	0	0	0	0
Horses Tested	Week	11	0	0	0	0	0	0
	YTD	148	14	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	56	23
	YTD	1,809	333
Tree Squirrels	Week	3	1
	YTD	80	14

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	986	42	0	0
	YTD	20,185	190	0	0
Mosquito Pools: RT-PCR	Week	1,234	60	0	0
	YTD	23,531	1,141	0	0
Mosquito Pools: RAMP	Week	126	1	N/A	N/A
	YTD	875	18	N/A	N/A

NEW POSITIVES

Humans

WNV Cases							
ID	Report Date	County ¹	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0039	09/13/10	Fresno	35	M	WNF	08/27/10	NO
10-0040	09/14/10	Placer	>18	F	WNND	08/15/10	NO
10-0041	09/14/10	Placer	>18	M	n/a	n/a	NO
10-0042	09/15/10	Fresno	76	M	WNND	08/27/10	NO
10-0043	09/15/10	Fresno	>65	F	WNND	08/06/10	YES
10-0044	09/15/10	Fresno	n/a	n/a	n/a	n/a	n/a
10-0045	09/15/10	Fresno	n/a	n/a	n/a	n/a	n/a
Presumptively Viremic Blood Donors (Asymptomatic Infections)							
BD10-0010	09/14/10	Merced	>18				

¹County of residence

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Dead Birds & Squirrels

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Alameda	Alameda Co MAD	Newark	94560	Western Scrub-Jay	9/7/2010	WNV	Chronic	RT-PCR
Alameda	Alameda Co MAD	Livermore	94551	American Crow	9/1/2010	WNV	Recent	RT-PCR
Butte	Butte Co MVCD	Chico	95973	Yellow-billed Magpie	9/1/2010	WNV	Recent	RT-PCR
Butte	Butte Co MVCD	Oroville	95965	American Crow	9/2/2010	WNV	Recent	RT-PCR
Lake	Lake Co VCD	Kelseyville	95451	Western Tanager	9/2/2010	WNV	Chronic	RT-PCR
Los Angeles	Greater LA Co VCD - SFS	Covina	91723	American Crow	8/29/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Winnetka	91306	American Crow	9/3/2010	WNV	Recent	RT-PCR
Madera	Madera Co MVCD	Madera	93636	House Finch	9/2/2010	WNV	Recent	RT-PCR
Madera	Madera Co MVCD	Madera	93637	House Sparrow	9/2/2010	WNV	Recent	RT-PCR
Merced	Merced Co MAD	Dos Palos	93620	American Crow	9/7/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Garden Grove	92840	American Crow	8/23/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Garden Grove	92840	American Crow	8/30/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Garden Grove	92840	American Crow	8/30/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Fullerton	92831	American Crow	9/1/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Orange	92869	American Crow	9/2/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Huntington Beach	92646	American Crow	9/2/2010	WNV	Recent	RT-PCR
Placer	Placer MVCD	Foresthill	95631	Lesser Goldfinch	8/31/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95833	House Finch	9/2/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95823	Yellow-billed Magpie	9/3/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	9/7/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Crow	9/7/2010	WNV	Recent	RT-PCR
San Joaquin	San Joaquin Co MVCD	Ripon	95366	Western Scrub-Jay	9/2/2010	WNV	Chronic	RT-PCR
San Mateo	San Mateo Co MAD	Half Moon Bay	94019	House Sparrow	8/30/2010	WNV	Chronic	RT-PCR
San Mateo	San Mateo Co. MAD	San Mateo	94402	Fox Squirrel	9/3/2010	WNV	Recent	RT-PCR
Stanislaus	East Side MAD	Modesto	95350	Western Scrub-Jay	9/2/2010	WNV	Recent	RT-PCR
Stanislaus	East Side MAD	Modesto	95350	Western Scrub-Jay	9/2/2010	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Ceres	95307	Yellow-billed Magpie	9/2/2010	WNV	Recent	RT-PCR
Tulare	Delta VCD	Visalia	93277	Western Scrub-Jay	9/1/2010	WNV	Recent	RT-PCR
Yolo	Sacramento-Yolo MVCD	Davis	95616	Western Scrub-Jay	9/1/2010	WNV	Recent	RT-PCR
Yolo	Sacramento-Yolo MVCD	Davis	95618	Western Scrub-Jay	9/7/2010	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in pool	City	Collected	Virus	Method
Contra Costa	CNTR1988	395	Culex pipiens	28	Brentwood	9/15/2010	WNV	RAMP
Contra Costa	CNTR7402	362	Culex tarsalis	20	Oakley	9/8/2010	WNV	RTPCR
Fresno	CNSL1752	565	Culex quinquefasciatus	28	Fresno	9/10/2010	WNV	RTPCR
Fresno	CNSL3124	643	Culex quinquefasciatus	39	Dinuba	9/8/2010	WNV	RTPCR
Fresno	FRWS4102	160	Culex tarsalis	50	Kerman	9/14/2010	WNV	RTPCR
Kern	KERN0114	1137	Culex quinquefasciatus	23	Bakersfield	9/8/2010	WNV	RTPCR
Kern	KERN0115	1125	Culex tarsalis	50	Bakersfield	9/8/2010	WNV	RTPCR
Kern	KERN0115	1126	Culex tarsalis	50	Bakersfield	9/8/2010	WNV	RTPCR
Kern	KERN3014	1128	Culex quinquefasciatus	50	Bakersfield	9/8/2010	WNV	RTPCR
Kern	KERN3014	1129	Culex tarsalis	50	Bakersfield	9/8/2010	WNV	RTPCR
Kern	KERN3016	1167	Culex quinquefasciatus	50	Bakersfield	9/10/2010	WNV	RTPCR
Kern	KERN3019	1170	Culex quinquefasciatus	50	Bakersfield	9/10/2010	WNV	RTPCR
Kern	KERN3029	1150	Culex quinquefasciatus	50	Buttonwillow	9/9/2010	WNV	RTPCR

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Kern	KERN3031	1132	Culex quinquefasciatus	50	Shafter	9/8/2010	WNV	RTPCR
Kern	KERN0031	1148	Culex tarsalis	50	Arvin	9/9/2010	WNV	RTPCR
Kern	KERN0031	1149	Culex tarsalis	50	Arvin	9/9/2010	WNV	RTPCR
Kern	KERN0083	1082	Culex quinquefasciatus	50	Arvin	9/1/2010	WNV	RTPCR
Kings	KNGS3018	657	Culex tarsalis	49	Lemoore	9/9/2010	WNV	RTPCR
Kings	KNGS3030	661	Culex tarsalis	50	Lemoore	9/9/2010	WNV	RTPCR
Kings	KNGS3033	634	Culex tarsalis	20	Hanford	9/7/2010	WNV	RTPCR
Kings	KNGS3043	636	Culex pipiens	20	Lemoore	9/7/2010	WNV	RTPCR
Los Angeles	GRLA2247	1503	Culex quinquefasciatus	50	Pico Rivera	9/10/2010	WNV	RTPCR
Los Angeles	GRLA2329	1475	Culex quinquefasciatus	42	Whittier	9/3/2010	WNV	RTPCR
Los Angeles	GRLA2334	1478	Culex quinquefasciatus	50	Whittier	9/3/2010	WNV	RTPCR
Los Angeles	GRLA2334	1479	Culex quinquefasciatus	12	Whittier	9/3/2010	WNV	RTPCR
Los Angeles	GRLA2995	6295	Culex quinquefasciatus	40	Woodland Hills	9/10/2010	WNV	RTPCR
Riverside	COAV0131	2667	Culex tarsalis	50	Oasis	9/14/2010	WNV	RTPCR
Sacramento	SAYO223019	5019	Culex tarsalis	1	Sacramento	9/9/2010	WNV	RTPCR
Sacramento	SAYO232012	5021	Culex pipiens	26	Elk Grove	9/10/2010	WNV	RTPCR
Sacramento	SAYO233009	5095	Culex tarsalis	50	Elk Grove	9/14/2010	WNV	RTPCR
Sacramento	SAYO233009	5096	Culex tarsalis	10	Elk Grove	9/14/2010	WNV	RTPCR
Sacramento	SAYO233010	5048	Culex tarsalis	41	Sacramento	9/10/2010	WNV	RTPCR
Sacramento	SAYO233010	5049	Culex pipiens	28	Sacramento	9/10/2010	WNV	RTPCR
San Bernardino	SANB0011	531	Culex quinquefasciatus	27	Rialto	8/25/2010	WNV	RTPCR
San Bernardino	SANB0012	534	Culex tarsalis	23	Grand Terrace City Hall	8/25/2010	WNV	RTPCR
San Bernardino	SANB0012	612	Culex tarsalis	45	Grand Terrace City Hall	9/1/2010	WNV	RTPCR
San Bernardino	SANB006	512	Culex tarsalis	50	Yucaipa	8/19/2010	WNV	RTPCR
San Joaquin	SJCM8010	682	Culex tarsalis	14	Ripon	9/14/2010	WNV	RTPCR
San Joaquin	SJCM8161	680	Culex pipiens	48	Ripon	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0406	829	Culex pipiens	50	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0407	830	Culex pipiens	50	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0408	835	Culex pipiens	50	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0408	838	Culex pipiens	50	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0420	908	Culex pipiens	50	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0420	910	Culex pipiens	37	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0421	886	Culex pipiens	50	Hughson	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0421	887	Culex pipiens	50	Hughson	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0421	891	Culex pipiens	50	Hughson	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0432	845	Culex pipiens	50	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0516	871	Culex pipiens	50	Denair	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0516	884	Culex pipiens	31	Denair	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0625	859	Culex pipiens	15	Turlock	9/14/2010	WNV	RTPCR
Stanislaus	TRLK0704	727	Culex pipiens	16	Turlock	9/8/2010	WNV	RTPCR
Stanislaus	TRLK0718	728	Culex pipiens	50	Turlock	9/8/2010	WNV	RTPCR
Stanislaus	TRLK0718	730	Culex tarsalis	46	Turlock	9/8/2010	WNV	RTPCR
Sutter	SUYA0031	362	Culex tarsalis	50	Rio Oso	9/7/2010	WNV	RTPCR
Sutter	SUYA0044	345	Culex tarsalis	50	Pleasant Grove	8/30/2010	WNV	RTPCR
Sutter	SUYA0084	359	Culex pipiens	26	Yuba City	9/2/2010	WNV	RTPCR
Tulare	DLTA6434	963	Culex quinquefasciatus	50	Monson	9/8/2010	WNV	RTPCR
Yolo	SAYO125011	5116	Culex pipiens	4	Woodland	9/14/2010	WNV	RTPCR
Yolo	SAYO146002	5135	Culex tarsalis	10	Davis	9/14/2010	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	Band 06	Band 07
Contra Costa	CNTR8152	Knightsen	8/30/2010	WNV	1414	1415					
Kern	KERN0101	Lost Hills	9/7/2010	WNV	1751	1755					
Kern	KERN0102	Buttonwillow	9/7/2010	WNV	1761	1762	1763	1764	1767	1768	1770
Kern	KERN0107	Arvin	9/7/2010	WNV	1857						
Kern	KERN0112	Wasco	8/23/2010	WNV	1789						
Kern	KERN0112	Wasco	9/7/2010	WNV	1781	1782	1783	1784	1785	1787	
Kern	KERN0117	Bakersfield	9/7/2010	WNV	1838						
Madera	MADR4123	Chowchilla	9/7/2010	WNV	2112	2114	2116	2117			
Merced	MERC0501	El Nido	9/10/2010	WNV	2237						
Merced	MERC0006	Merced	9/10/2010	WNV	2228	2231	2232				
Placer	PLCR0017	Sheridan	9/7/2010	WNV	2457						
Riverside	COAV0122	Mecca	9/7/2010	WNV	1342						
Riverside	COAV0131	Oasis	9/7/2010	WNV	1349						
Riverside	NWST0004	Flabob Airport	9/8/2010	WNV	2385	2394					
San Bernardino	SANB0011	Rialto	9/6/2010	WNV	2848						
San Bernardino	SANB0007	Fontana	9/6/2010	WNV	2814						
Solano	SOLA0125	Cordelia	9/10/2010	WNV	3255						
Tulare	DLTA6309	Reedley	9/7/2010	WNV	1542	1543	1544	1548			
Tulare	DLTA8530	Visalia	9/7/2010	WNV	1526	1527					

**Date bled is equivalent to the probable date of seroconversion. The filter paper bleed date is reported as the date bled when whole blood is requested & tested for confirmation.

NATIONAL COMMENTS

As of September 14, 2010, 381 human cases of WNV had been reported nationwide in 30 states: Alabama (3), Arizona (82), Arkansas (3), California (38), Colorado (37), Connecticut (7), Florida (3), Georgia (6), Illinois (1), Indiana (3), Iowa (2), Kansas (5), Louisiana (12), Maryland (6), Massachusetts (3), Michigan (10), Minnesota (3), Mississippi (5), Missouri (3), Nebraska (19), New Jersey (7), New Mexico (6), New York (62), North Dakota (7), Ohio (2), Pennsylvania (1), South Dakota (17), Texas (24), Wisconsin (1), and Wyoming (3). Of the 381 cases, 217 (57%) had neuroinvasive disease. A total of 12 WNV-related fatalities have been reported in Arizona (6), Florida (1), Nebraska (1), New York (2), and Texas (2).

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).

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*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.

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
