

California Arbovirus Surveillance Bulletin # 20

Week 27 Friday, July 9, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

This week, a West Nile virus (WNV) positive blood donor was reported in Stanislaus County. The individual donated blood in late June and testing done by the blood bank confirmed acute WNV infection. This is the first detection of West Nile virus in a human this year; however, the individual has not developed symptoms so is not considered a case of WNV illness. No cases of human WNV illness have been reported in California this year. At this time last year, an asymptomatic blood donor from Los Angeles County had tested positive for WNV infection.

Horses

No equine cases have been reported in 2010.

Dead Birds & Tree Squirrels

This week, 11 recently-infected* WNV positive dead birds were reported from 5 counties: Butte (2), Los Angeles (3), Madera (2), Sacramento (3), and Santa Cruz (1). These are the first WNV positive birds reported from Butte County this year. An additional 2 birds from 2 counties tested positive for chronic infection with WNV. No positive tree squirrels were reported this week.

In 2010, 52 recently-infected* WNV positive dead birds have been reported from 12 counties, and an additional 15 chronic WNV infections have been detected in birds from 9 counties (see www.westnile.ca.gov for more details). At this time last year, 139 birds from 24 counties and one tree squirrel 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 has begun 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

This week, 59 WNV positive mosquito pools were reported from the following 10 counties: Fresno (3), Imperial (7), Kern (9), Merced (4), Riverside (19), Sacramento (10), San Joaquin (2), Santa Clara (3), Sutter (1), and Tulare (1). This is the first detection of WNV activity San Joaquin County this year. In 2010, 107 mosquito pools from 13 counties have tested positive for WNV. At this time last year, 120 WNV positive mosquito pools had been reported from 12 counties.

Sentinel Chickens

This week, 6 WNV seroconversions were detected in chickens from Imperial and Riverside counties. These are the first WNV positive chickens reported this year and the first detection of WNV activity in Imperial County in 2010. At this time last year, 5 WNV positive chickens from 2 counties (Los Angeles and Yolo) had been reported.

2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	8,633	5,072
# Positive Counties	25	19
# Human Cases	0	0
# Horse Cases	0	0
# Positive Dead Birds / # Tested	139 / 1,398	52 / 966
# Positive Mosquito Pools / # Tested	120 / 10,576	107 / 10,816
# Seroconversions / # Tested	5 / 10,849	6 / 11,176
# Positive Squirrels / # Tested	1 / 51	1 / 41

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YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds [^]	Mosquito Pools	Sentinel Chickens	Squirrels
Butte			2			1
Fresno				5		
Imperial				7	3	
Kern				20		
Los Angeles			7			
Madera			5	4		
Merced			3	4		
Placer			1			
Orange			1	2		
Riverside				32	3	
Sacramento			6	18		
San Bernardino			1	2		
San Diego			1			
San Joaquin				2		
Santa Clara			19	6		
Santa Cruz			3			
Stanislaus			3			
Sutter				2		
Tulare				3		
Totals	0	0	52	107	6	1

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

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE		Other	
			Imported	Local	Imported	Local	Imported	Local	Imported	Local
Humans Tested*	Week	14	0	0	0	0	0	0	0	0
	YTD	378	0	0	0	0	0	0	0	0
Horses Tested	Week	0	0	0	0	0	0	0	0	0
	YTD	81	0	0	0	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	79	11
	YTD	966	52
Tree Squirrels	Week	3	0
	YTD	41	1

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	1,161	6	0	0
	YTD	11,176	6	0	0
Mosquito Pools: RT-PCR	Week	1,027	56	0	0
	YTD	10,460	101	0	0
Mosquito Pools: RAMP	Week	37	3	N/A	N/A
	YTD	356	6	N/A	N/A

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POSITIVES

Dead Birds & Tree Squirrels

County	Submitting Agency	City	Zip	Species	Reported	Test Result	Type of Infection	Method
Butte	Butte Co MVCD	Chico	95928	Yellow-billed Magpie	6/23/2010	WNV	Recent	RT-PCR
Butte	Butte Co MVCD	Oroville	95965	Bluebird	6/29/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Stevenson Ranch	91381	Mourning Dove	6/17/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	La Mirada	90638	American Crow	6/21/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Glendora	91740	American Crow	6/29/2010	WNV	Recent	RT-PCR
Madera	Madera Co MVCD	Madera	93636	Western Scrub-Jay	6/30/2010	WNV	Recent	RT-PCR
Madera	Madera Co MVCD	Madera	93636	American Crow	6/30/2010	WNV	Recent	RT-PCR
Monterey	N. Salinas Valley MAD	Salinas	93908	American Crow	6/24/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95819	American Robin	6/28/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95841	Yellow-billed Magpie	6/24/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	Western Scrub-Jay	6/30/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95757	American Robin	6/30/2010	WNV	Recent	RT-PCR
Santa Cruz	Santa Cruz MVCD	Santa Cruz	95062	Pacific-slope Flycatcher	6/24/2010	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in Pool	City	Collected	Virus	Method
Fresno	CNSL1153	130	Culex quinquefasciatus	50	Fresno	6/30/2010	WNV	RTPCR
Fresno	CNSL1446	134	Culex quinquefasciatus	50	Clovis	7/1/2010	WNV	RTPCR
Fresno	CNSL1702	133	Culex quinquefasciatus	39	Fresno	7/1/2010	WNV	RTPCR
Imperial	COAV5001	2152	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Imperial	COAV5001	2153	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Imperial	COAV5001	2154	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Imperial	COAV5001	2155	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Imperial	COAV5001	2156	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Imperial	COAV5001	2157	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Imperial	COAV5001	2158	Culex tarsalis	50	Niland	6/29/2010	WNV	RTPCR
Kern	KERN1005	414	Culex quinquefasciatus	17	Bakersfield	6/29/2010	WNV	RTPCR
Kern	KERN2002	466	Culex quinquefasciatus	28	Bakersfield	7/2/2010	WNV	RTPCR
Kern	KERN2005	415	Culex quinquefasciatus	50	Bakersfield	6/29/2010	WNV	RTPCR
Kern	KERN2011	452	Culex quinquefasciatus	34	Bakersfield	6/30/2010	WNV	RTPCR
Kern	KERN3004	455	Culex quinquefasciatus	50	Bakersfield	6/30/2010	WNV	RTPCR
Kern	KERN3008	458	Culex tarsalis	12	Bakersfield	7/1/2010	WNV	RTPCR
Kern	KERN3009	457	Culex tarsalis	50	Bakersfield	7/1/2010	WNV	RTPCR
Kern	KERN3033	422	Culex tarsalis	50	Bakersfield	6/29/2010	WNV	RTPCR
Kern	KERN3033	424	Culex quinquefasciatus	50	Bakersfield	6/29/2010	WNV	RTPCR
Merced	MERC27	10	Culex tarsalis	50	Merced	6/29/2010	WNV	RTPCR
Merced	MERC27	11	Culex tarsalis	50	Merced	6/29/2010	WNV	RTPCR
Merced	MERC27	12	Culex tarsalis	30	Merced	6/29/2010	WNV	RTPCR

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Merced	MERC909	9	Culex tarsalis	13	Merced	6/29/2010	WNV	RTPCR
Riverside	COAV121	2206	Culex tarsalis	50	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV121	2207	Culex tarsalis	48	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV13	2239	Culex tarsalis	34	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV130	2184	Culex tarsalis	24	Mecca	7/1/2010	WNV	RTPCR
Riverside	COAV17	2245	Culex tarsalis	50	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV27	2234	Culex quinquefasciatus	23	North Shore	7/7/2010	WNV	RTPCR
Riverside	COAV45	2212	Culex tarsalis	50	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV48	2142	Culex tarsalis	50	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV48	2148	Culex tarsalis	50	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV48	2151	Culex tarsalis	42	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV48	2200	Culex tarsalis	50	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV5	2221	Culex tarsalis	50	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV540	2131	Culex tarsalis	50	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV540	2133	Culex tarsalis	50	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV540	2137	Culex tarsalis	50	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV540	2138	Culex tarsalis	50	Mecca	6/29/2010	WNV	RTPCR
Riverside	COAV58	2205	Culex tarsalis	27	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV6	2249	Culex tarsalis	50	Mecca	7/7/2010	WNV	RTPCR
Riverside	COAV68	2187	Culex tarsalis	16	Mecca	7/1/2010	WNV	RTPCR
Sacramento	SAYO204033	1918	Culex tarsalis	9	Sacramento	7/2/2010	WNV	RTPCR
Sacramento	SAYO204033	1919	Culex pipiens	23	Sacramento	7/2/2010	WNV	RTPCR
Sacramento	SAYO213007	1923	Culex pipiens	50	Sacramento	7/2/2010	WNV	RTPCR
Sacramento	SAYO233003	1956	Culex tarsalis	9	Elk Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO233003	1957	Culex pipiens	9	Elk Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO233003	1958	Culex pipiens	1	Elk Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO234012	1952	Culex tarsalis	50	Elk Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO234012	1953	Culex pipiens	50	Elk Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO234012	1954	Culex pipiens	12	Elk Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO234013	1949	Culex tarsalis	16	Elk Grove	7/7/2010	WNV	RTPCR
San Joaquin	SJCM8056	256	Culex tarsalis	47	Manteca	7/7/2010	WNV	RTPCR
San Joaquin	SJCM8056	257	Culex pipiens	11	Manteca	7/7/2010	WNV	RTPCR
Santa Clara	STCL1718	3078	Culex pipiens	9	San Jose	7/8/2010	WNV	RAMP
Santa Clara	STCL1720	3074	Culex pipiens	8	San Jose	7/8/2010	WNV	RAMP
Santa Clara	STCL1722	3072	Culex pipiens	12	Campbell	7/8/2010	WNV	RAMP
Sutter	SUYA31	87	Culex pipiens	30	Rio Oso	7/6/2010	WNV	RTPCR
Tulare	DLTA7624	291	Culex quinquefasciatus	34	Woodlake	7/1/2010	WNV	RTPCR

Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02	Band 03
Imperial	COAV5001	Niland	6/28/2010	WNV	1312	1315	1318
Riverside	COAV0122	Mecca	6/28/2010	WNV	1269		
Riverside	COAV0060	North Shore	6/28/2010	WNV	1292	1297	

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NATIONAL COMMENTS

As of July 6, 2010, four WNV human cases have been reported in Georgia (2), Mississippi (1), and North Dakota (1). Three cases had neuroinvasive illness; no fatalities have been reported. In addition, one asymptomatic blood donor has been reported in Texas.

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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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
