

California Arbovirus Surveillance Bulletin # 21

Week 28 Friday, July 16, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

The first two human cases of West Nile virus (WNV) in 2010 were reported this week from Stanislaus County. WNV infection was initially detected in two asymptomatic blood donors through screening performed at a blood bank center. Both individuals subsequently developed symptoms consistent with West Nile fever; neither were hospitalized. In addition, a third WNV positive blood donor was reported from Madera County; this individual has remained asymptomatic.

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, 14 recently-infected* WNV positive dead birds were reported from the following 10 counties: Fresno (2), Kern (1), Los Angeles (1), Orange (1), Sacramento (4), San Joaquin (1), Santa Clara (1), Santa Cruz (1), Stanislaus (1) and Yolo (1). These are the first WNV positive birds reported from Fresno and Kern counties, and the first detection of WNV activity in San Joaquin and Yolo counties this year. An additional 5 birds from 3 counties tested positive for chronic infection with WNV. No positive tree squirrels were reported this week.

In 2010, 66 recently-infected* WNV positive dead birds have been reported from 16 counties, and an additional 20 chronic WNV infections have been detected in birds from 11 counties (see www.westnile.ca.gov for more details). At this time last year, 169 birds from 30 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 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

This week, 95 WNV positive mosquito pools were reported from the following 10 counties: Fresno (19), Kern (21), Los Angeles (1), Madera (1), Sacramento (38), San Joaquin (4), Santa Clara (5), Stanislaus (2), Sutter (2), and Tulare (2). These are the first WNV positive mosquito pools detected in Los Angeles and Stanislaus counties this year. In 2010, 202 mosquito pools from 15 counties have tested positive for WNV. At this time last year, 168 WNV positive mosquito pools had been reported from 14 counties.

Sentinel Chickens

This week, 2 WNV seroconversions were reported from one flock in Riverside County. In 2010, 8 WNV positive chickens have been detected among 4 flocks from 2 counties. At this time last year, 10 WNV positive chickens from 3 counties (Los Angeles, San Diego, and Yolo) had been reported.

2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	9,294	5,721
# Positive Counties	31	20
# Human Cases	0	2
# Horse Cases	0	0
# Positive Dead Birds / # Tested	169 / 1,561	66 / 1,033
# Positive Mosquito Pools / # Tested	168 / 11,969	202 / 11,934
# Seroconversions / # Tested	10 / 11,755	8 / 11,946
# Positive Squirrels / # Tested	1 / 54	1 / 41

California Arbovirus Surveillance Bulletin # 21

Week 28 Friday, July 16, 2010

YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds [^]	Mosquito Pools	Sentinel Chickens	Squirrels
Butte			2			1
Fresno			2	24		
Imperial				7	3	
Kern			1	41		
Los Angeles			8	1		
Madera			5	5		
Merced			3	4		
Placer			1			
Orange			2	2		
Riverside				32	5	
Sacramento			10	56		
San Bernardino			1	2		
San Diego			1			
San Joaquin			1	6		
Santa Clara			20	11		
Santa Cruz			4			
Stanislaus	2		4	2		
Sutter				4		
Tulare				5		
Yolo			1			
Totals	2	0	66	202	8	1

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

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE	
			Local	Imported	Local	Imported	Local	Imported
Humans Tested*	Week	10	2	0	0	0	0	0
	YTD	388	2	0	0	0	0	0
Horses Tested	Week	0	0	0	0	0	0	0
	YTD	81	0	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	67	14
	YTD	1,033	66
Tree Squirrels	Week	0	0
	YTD	41	1

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	770	2	0	0
	YTD	11,946	8	0	0
Mosquito Pools: RT-PCR	Week	1,313	90	0	0
	YTD	11,773	191	0	0
Mosquito Pools: RAMP	Week	51	5	N/A	N/A
	YTD	407	11	N/A	N/A

California Arbovirus Surveillance Bulletin # 21

Week 28 Friday, July 16, 2010

POSITIVES

Humans

WNV Cases							
ID	Report Date	County ¹	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0001	07/12/10	Stanislaus	56	F	WNF ²	n/a	NO
10-0002	07/07/10	Stanislaus	27	F	WNF ²	n/a	NO
WNV Positive Blood Donors (Asymptomatic Infections)							
ID	Report Date	County ¹	Age	Sex			
BD10-0001	Blood donor developed symptoms - moved to case line list (10-0002)						
BD10-0002	07/13/10	MADERA	<18	M			

¹County of residence

²Initially identified as blood donor

Dead Birds & Tree Squirrels

County	Submitting Agency	City	Zip	Species	Reported	Test Result	Type of Infection	Method
Fresno	Consolidated MAD	Clovis	93612	American Crow	7/11/2010	WNV	Recent	RAMP
Fresno	Consolidated MAD	Fresno	93726	American Crow	6/29/2010	WNV	Recent	RT-PCR
Kern	Kern MVCD	Bakersfield	93307	House Sparrow	7/7/2010	WNV	Chronic	RT-PCR
Kern	Kern MVCD	Bakersfield	93309	House Sparrow	7/6/2010	WNV	Recent	RT-PCR
Los Angeles	LA Co Veterinarian	West Covina	91790	American Crow	7/5/2010	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Mission Viejo	92691	American Crow	6/30/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95827	Anna's Hummingbird	7/1/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Folsom	95630	Acorn Woodpecker	7/6/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95824	House Sparrow	7/7/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	7/2/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	Yellow-billed Magpie	7/6/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95838	American Crow	7/7/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	7/8/2010	WNV	Recent	RT-PCR
San Joaquin	San Joaquin Co MVCD	Manteca	95336	Yellow-billed Magpie	7/5/2010	WNV	Recent	RT-PCR
Santa Clara	Santa Clara Co VCD	Santa Clara	95050	American Crow	7/8/2010	WNV	Recent	VecTest
Santa Cruz	Santa Cruz MVCD	Boulder Creek	95006	Western Scrub-Jay	7/1/2010	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Ceres	95307	House Sparrow	6/29/2010	WNV	Recent	RT-PCR
Ventura	Ventura Co Env Health	Simi Valley	93063	American Crow	7/2/2010	WNV	Chronic	RT-PCR
Yolo	Sacramento-Yolo MVCD	Woodland	95695	American Crow	7/7/2010	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in pool	City	Collected	Virus	Method
Fresno	CNSL1062	144	Culex quinquefasciatus	38	Fresno	7/7/2010	WNV	RTPCR
Fresno	CNSL1068	140	Culex quinquefasciatus	49	Fresno	7/7/2010	WNV	RTPCR
Fresno	CNSL1245	139	Culex quinquefasciatus	31	Clovis	7/7/2010	WNV	RTPCR

California Arbovirus Surveillance Bulletin # 21

Week 28 Friday, July 16, 2010

Fresno	CNSL1267	152	Culex quinquefasciatus	50	Clovis	7/9/2010	WNV	RTPCR
Fresno	CNSL1267	158	Culex quinquefasciatus	50	Clovis	7/7/2010	WNV	RTPCR
Fresno	CNSL1335	164	Culex quinquefasciatus	50	Fresno	7/13/2010	WNV	RTPCR
Fresno	CNSL1695	141	Culex quinquefasciatus	50	Fresno	7/7/2010	WNV	RTPCR
Fresno	CNSL1696	143	Culex quinquefasciatus	50	Fresno	7/7/2010	WNV	RTPCR
Fresno	CNSL1725	147	Culex quinquefasciatus	31	Clovis	7/7/2010	WNV	RTPCR
Fresno	CNSL1725	157	Culex quinquefasciatus	45	Clovis	7/9/2010	WNV	RTPCR
Fresno	CNSL1726	153	Culex quinquefasciatus	47	Clovis	7/9/2010	WNV	RTPCR
Fresno	CNSL1726	154	Culex quinquefasciatus	47	Clovis	7/9/2010	WNV	RTPCR
Fresno	CNSL1727	155	Culex quinquefasciatus	50	Clovis	7/9/2010	WNV	RTPCR
Fresno	CNSL1728	148	Culex quinquefasciatus	22	Clovis	7/7/2010	WNV	RTPCR
Fresno	CNSL1728	156	Culex quinquefasciatus	31	Clovis	7/9/2010	WNV	RTPCR
Fresno	CNSL1729	165	Culex quinquefasciatus	50	Clovis	7/13/2010	WNV	RTPCR
Fresno	CNSL2019	159	Culex quinquefasciatus	39	Clovis	7/13/2010	WNV	RTPCR
Fresno	CNSL2055	160	Culex quinquefasciatus	29	Clovis	7/13/2010	WNV	RTPCR
Fresno	CNSL4024	367	Culex quinquefasciatus	50	Selma	6/29/2010	WNV	RTPCR
Kern	AFSB112	87	Culex tarsalis	4	Bakersfield	7/7/2010	WNV	RTPCR
Kern	KERN28	534	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN115	481	Culex tarsalis	50	Bakersfield	7/7/2010	WNV	RTPCR
Kern	KERN1005	489	Culex quinquefasciatus	50	Bakersfield	7/7/2010	WNV	RTPCR
Kern	KERN2001	527	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2002	542	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2002	543	Culex quinquefasciatus	32	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2005	487	Culex quinquefasciatus	39	Bakersfield	7/7/2010	WNV	RTPCR
Kern	KERN2010	540	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2010	541	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2016	499	Culex quinquefasciatus	50	Bakersfield	7/8/2010	WNV	RTPCR
Kern	KERN2016	500	Culex quinquefasciatus	50	Bakersfield	7/8/2010	WNV	RTPCR
Kern	KERN2016	501	Culex quinquefasciatus	20	Bakersfield	7/8/2010	WNV	RTPCR
Kern	KERN2018	495	Culex quinquefasciatus	43	Bakersfield	7/8/2010	WNV	RTPCR
Kern	KERN2020	546	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2020	547	Culex quinquefasciatus	20	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2024	548	Culex quinquefasciatus	16	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2028	525	Culex quinquefasciatus	50	Bakersfield	7/9/2010	WNV	RTPCR
Kern	KERN2051	496	Culex quinquefasciatus	50	Bakersfield	7/8/2010	WNV	RTPCR
Kern	KERN2051	497	Culex quinquefasciatus	50	Bakersfield	7/8/2010	WNV	RTPCR
Kern	KERN3020	529	Culex quinquefasciatus	23	Bakersfield	7/9/2010	WNV	RTPCR
Los Angeles	GRLA2651	5838	Culex quinquefasciatus	28	Encino	7/7/2010	WNV	RTPCR
Madera	MADR1039	44	Culex tarsalis	18	Madera Ranchos	7/8/2010	WNV	RTPCR
Orange	ORCO3	984	Culex quinquefasciatus	22	Garden Grove	7/7/2010	WNV	RTPCR
Sacramento	SAYO234002	2111	Cx tarsalis	10	Elk Grove	7/9/2010	WNV	RTPCR
Sacramento	SAYO233030	2113	Cx tarsalis	3	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233030	2115	Cx pipiens	5	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233018	2116	Cx tarsalis	24	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233018	2117	Cx pipiens	5	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233018	2118	Cx pipiens	50	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233018	2119	Cx pipiens	18	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO204008	2130	Cx pipiens	12	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233033	2107	Culex tarsalis	25	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233033	2108	Cx pipiens	16	Sacramento	7/9/2010	WNV	RTPCR

California Arbovirus Surveillance Bulletin # 21

Week 28 Friday, July 16, 2010

Sacramento	SAYO233033	2109	Cx pipiens	1	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO233033	2110	Culiseta incidens	9	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO204035	2139	Culex pipiens	50	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO213005	2436	Culex pipiens	20	Sacramento	7/15/2010	WNV	RTPCR
Sacramento	SAYO213025	2146	Culex tarsalis	40	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO213025	2148	Culex pipiens	50	Sacramento	7/9/2010	WNV	RTPCR
Sacramento	SAYO214023	2454	Culex tarsalis	6	Rancho Cordova	7/15/2010	WNV	RTPCR
Sacramento	SAYO223007	2287	Culex tarsalis	1	Sacramento	7/13/2010	WNV	RTPCR
Sacramento	SAYO224006	2240	Culex tarsalis	36	Sacramento	7/10/2010	WNV	RTPCR
Sacramento	SAYO233008	2224	Culex tarsalis	13	Sacramento	7/10/2010	WNV	RTPCR
Sacramento	SAYO233015	2285	Culex pipiens	26	Sacramento	7/13/2010	WNV	RTPCR
Sacramento	SAYO233016	2253	Culex tarsalis	40	Sacramento	7/10/2010	WNV	RTPCR
Sacramento	SAYO233018	2313	Culex tarsalis	14	Sacramento	7/13/2010	WNV	RTPCR
Sacramento	SAYO233033	2299	Culex tarsalis	32	Sacramento	7/13/2010	WNV	RTPCR
Sacramento	SAYO233033	2300	Culex pipiens	7	Sacramento	7/13/2010	WNV	RTPCR
Sacramento	SAYO233036	2267	Culex tarsalis	14	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO234002	2296	Culex tarsalis	25	Elk Grove	7/13/2010	WNV	RTPCR
Sacramento	SAYO234002	2298	Culex pipiens	4	Elk Grove	7/13/2010	WNV	RTPCR
Sacramento	SAYO234004	2214	Culex tarsalis	49	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO234007	2211	Culex tarsalis	42	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO234007	2213	Culex pipiens	3	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO234007	2288	Culex tarsalis	39	Elk Grove	7/13/2010	WNV	RTPCR
Sacramento	SAYO234007	2290	Culex pipiens	1	Elk Grove	7/13/2010	WNV	RTPCR
Sacramento	SAYO234013	2263	Culex tarsalis	50	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO234013	2264	Culex pipiens	50	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO234013	2266	Culex pipiens	1	Elk Grove	7/10/2010	WNV	RTPCR
Sacramento	SAYO243013	2204	Culex pipiens	50	Elk Grove	7/9/2010	WNV	RTPCR
Sacramento	SAYO243013	2205	Culex pipiens	50	Elk Grove	7/9/2010	WNV	RTPCR
San Joaquin	SJCM8076	291	Culex tarsalis	12	Stockton	7/13/2010	WNV	RTPCR
San Joaquin	SJCM8077	294	Culex tarsalis	22	Stockton	7/13/2010	WNV	RTPCR
San Joaquin	SJCM8083	307	Culex pipiens	50	Escalon	7/15/2010	WNV	RTPCR
San Joaquin	SJCM8185	288	Culex pipiens	17	Manteca	7/13/2010	WNV	RTPCR
Santa Clara	STCL2152	3114	Culex pipiens	10	San Jose	7/13/2010	WNV	RAMP
Santa Clara	STCL2153	3115	Culex pipiens	5	San Jose	7/13/2010	WNV	RAMP
Santa Clara	STCL2197	3083	Culex pipiens	7	Santa Clara	7/13/2010	WNV	RAMP
Santa Clara	STCL2198	3084	Culex pipiens	8	Santa Clara	7/13/2010	WNV	RAMP
Santa Clara	STCL2198	3085	Culex tarsalis	3	Santa Clara	7/13/2010	WNV	RAMP
Stanislaus	TRLK305	263	Culex tarsalis	50	Grayson	7/13/2010	WNV	RTPCR
Stanislaus	TRLK502	286	Culex tarsalis	50	Vernalis	7/13/2010	WNV	RTPCR
Sutter	SUYA31	114	Culex pipiens	44	Rio Oso	7/12/2010	WNV	RTPCR
Sutter	SUYA31	142	Culex tarsalis	45	Rio Oso	7/13/2010	WNV	RTPCR
Tulare	DLTA8519	373	Culex quinquefasciatus	50	Visalia	7/13/2010	WNV	RTPCR
Tulare	TLRE20	12	Culex tarsalis	50	Tulare	7/14/2010	WNV	RTPCR

Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02
Riverside	COAV0035	Mecca	6/28/10	WNV	1243	1246

California Arbovirus Surveillance Bulletin # 21

Week 28 Friday, July 16, 2010

NATIONAL COMMENTS

As of July 13, 2010, 10 human cases of WNV had been reported in six states: Arizona (1), Colorado (3), Georgia (3), Mississippi (1), North Dakota (1), and South Dakota (1). Two 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.

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
