

California Arbovirus Surveillance Bulletin # 23

Week 28 Monday, July 20, 2009

Weekly Summary

WEEKLY COMMENTS



As of July 17, 2009, 31 counties have reported West Nile virus (WNV) activity. At this time last year, 25 counties had reported WNV activity.

Humans

No human cases have been reported in 2009. One WNV infection has been identified in a blood donor from Los Angeles County. The individual has remained asymptomatic. At this time last year, three WNV cases had been reported from two counties.

Horses

No equine cases have been reported in 2009. At this time last year, two equine WNV cases had been reported from two counties.

Dead Birds & Tree Squirrels

Last week, 30 new WNV positive dead birds were reported from 15 counties: Colusa (2), Contra Costa (3), El Dorado (1), Kern (3), Lake (1), Los Angeles (7), Modoc (1), Placer (1), San Bernardino (1), San Joaquin (1), San Mateo (1), Santa Clara (2), Shasta (1), Stanislaus (2), and Tulare (3). This is the first indication of WNV activity in Colusa, El Dorado, Lake, Modoc, Placer, and San Mateo counties this year. In 2009, 169 birds from 30 counties have tested positive for WNV. At this time last year, 332 WNV positive dead birds had been reported from 23 counties.

No positive tree squirrels were reported last week. In 2009, one tree squirrel from Fresno County has tested positive for WNV. At this time last year, one WNV positive tree squirrel had been reported from San Bernardino County.

Mosquito Pools

Forty-eight WNV positive mosquito pools were reported last week from 10 counties: Contra Costa (2), Fresno (7), Kern (5), Kings (7), Los Angeles (1), Riverside (1), Sacramento (4), San Joaquin (15), Tulare (4), and Yolo (2). These are the first WNV positive mosquitoes detected in Kings and Yolo counties this year. In 2009, 168 mosquito pools have tested positive for WNV from 14 counties. At this time last year, 155 WNV positive mosquito pools had been reported from 17 counties.

Sentinel Chickens

Five new WNV seroconversions were reported last week from Los Angeles (3) and San Diego (2) counties; these are the first WNV positive chickens detected in San Diego County this year. One flavivirus positive chicken from Imperial County is still pending. In 2009, 10 chickens from three counties have tested positive for WNV antibodies. At this time last year, six WNV seroconversions had been reported from four 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.

2009 & 2008 YTD West Nile Virus Comparisons		
	2008	2009
Total # Dead Bird Reports	15,066	9,294
# Positive Counties	25	31
# Human Cases/ # Tested	3 / 400	0 / 465
# Horse Cases/ # Tested	2 / 109	0 / 106
# Positive Dead Birds/ # Tested	332 / 2,313	169 / 1,561
# Positive Mosquito Pools/ # Tested	155 / 9,923	168 / 11,969
# Positive Chicken Sera/ # Tested	6 / 13,710	10 / 11,755
# Positive Squirrels/ # Tested	1 / 85	1 / 54

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YTD WNV Activity by Element and County, 2009

County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			6			
Butte			3			
Colusa			2			
Contra Costa			4	13		
El Dorado			1			
Fresno			36	59		1
Kern			15	21		
Kings			6	7		
Lake			1			
Los Angeles			28	4	7	
Madera			6	1		
Merced			1			
Modoc			1			
Orange			5	1		
Placer			1			
Riverside			1	6		
Sacramento			5	5		
San Bernardino			3			
San Diego			14		2	
San Joaquin			4	22		
San Mateo			1			
Santa Barbara			1			
Santa Clara			7	14		
Santa Cruz			1			
Shasta			5			
Stanislaus			4			
Sutter				2		
Tulare			4	11		
Tuolumne			1			
Ventura			1			
Yolo			1	2	1	
Total	0	0	169	168	10	1

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE		Other	
			Imported	Local	Imported	Local	Imported	Local	Imported	Local
Humans Tested*	Week	16	0	0	0	0	0	0	0	0
	YTD	465	0	0	0	0	0	0	0	0
Horses Tested	Week	7	0	0	0	0	0	0	0	0
	YTD	106	0	0	0	0	0	0	0	0

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Dead Birds & Tree Squirrels

		Number Tested	WNV Positive
Dead Birds	Week	165	30
	YTD	1,561	169
Tree Squirrels	Week	3	0
	YTD	54	1

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive	Flavivirus Positive
Chicken Sera	Week	906	5	0	0	1
	YTD	11,755	10	0	0	1
Mosquito Pools: RT-PCR	Week	1,354	46	0	0	n/a
	YTD	11,555	142	0	0	n/a
Mosquito Pools: RAMP	Week	39	2	N/A	N/A	n/a
	YTD	414	26	N/A	N/A	n/a

POSITIVES

Dead Birds & Tree Squirrels

County	City	Zip Code	Species	Reported	Tested	Virus	Method
Colusa	Colusa	95932	Western Scrub-Jay	7/8/09	7/13/09	WNV	RT-PCR
Colusa	Colusa	95932	Western Scrub-Jay	7/8/09	7/13/09	WNV	RT-PCR
Contra Costa	Concord	94520	House Finch	7/7/09	7/13/09	WNV	RT-PCR
Contra Costa	Danville	94506	House Finch	7/2/09	7/13/09	WNV	RT-PCR
Contra Costa	Martinez	94553	House Finch	6/30/09	7/13/09	WNV	RT-PCR
El Dorado	Cameron Park	95682	Western Scrub-Jay	7/6/09	7/13/09	WNV	RT-PCR
Kern	Bakersfield	93263	Warbler	7/7/09	7/13/09	WNV	RT-PCR
Kern	Bakersfield	93309	American Crow	7/7/09	7/13/09	WNV	RT-PCR
Kern	Shafter	93263	Peacock	7/7/09	7/13/09	WNV	RT-PCR
Lake	Lucerne	95458	American Crow	7/1/09	7/13/09	WNV	RT-PCR
Los Angeles	Cerritos	90703	American Crow	7/1/09	7/13/09	WNV	RT-PCR
Los Angeles	Lancaster	93534	American Crow	7/1/09	7/13/09	WNV	RT-PCR
Los Angeles	Lancaster	93536	Sparrow	7/1/09	7/13/09	WNV	RT-PCR
Los Angeles	Lancaster	93536	House Sparrow	7/5/09	7/13/09	WNV	RT-PCR
Los Angeles	Lancaster	93536	House Sparrow	7/6/09	7/13/09	WNV	RT-PCR
Los Angeles	Lancaster	93536	House Finch	7/6/09	7/13/09	WNV	RT-PCR
Los Angeles	Lancaster	93536	House Finch	7/6/09	7/13/09	WNV	RT-PCR
Modoc	Lookout	96054	Chickadee	7/7/09	7/13/09	WNV	RT-PCR
Placer	Lincoln	95648	Western Kingbird	7/2/09	7/13/09	WNV	RT-PCR
San Bernardino	Chino Hills	91709	House Sparrow	6/30/09	7/13/09	WNV	RT-PCR
San Joaquin	Lathrop	95330	American Crow	7/8/09	7/10/09	WNV	RAMP
San Mateo	Redwood City	94062	Downy Woodpecker	7/5/09	7/13/09	WNV	RT-PCR
Santa Clara	Saratoga	95070	American Crow	7/7/09	7/7/09	WNV	VecTest
Santa Clara	Sunnyvale	94087	American Crow	7/6/09	7/6/09	WNV	VecTest
Shasta	Redding	96003	Western Scrub-Jay	7/7/09	7/13/09	WNV	RT-PCR
Stanislaus	Modesto	95350	Western Scrub-Jay	7/6/09	7/13/09	WNV	RT-PCR
Stanislaus	Modesto	95350	Western Scrub-Jay	7/7/09	7/13/09	WNV	RT-PCR
Tulare	Dinuba	93618	House Sparrow	7/8/09	7/13/09	WNV	RT-PCR
Tulare	Tulare	93274	American Crow	7/7/09	7/13/09	WNV	RT-PCR
Tulare	Visalia	93291	American Crow	7/8/09	7/13/09	WNV	RT-PCR

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Mosquitoes

County	Site Code	Pool #	Species	# in Pool	Collected	Tested	City	Virus	Method
Contra Costa	CNTR2479	336	Cx pipiens	50	7/6/2009	7/8/2009	Oakley	WNV	RAMP
Contra Costa	CNTR2479	410	Cx pipiens	50	7/13/2009	7/15/2009	Oakley	WNV	RAMP
Fresno	CNSL1116	180	Cx quinquefasciatus	34	7/10/2009	7/15/2009	Fresno	WNV	RTPCR
Fresno	CNSL1267	178	Cx quinquefasciatus	50	7/10/2009	7/15/2009	Clovis	WNV	RTPCR
Fresno	CNSL1586	170	Cx quinquefasciatus	50	7/8/2009	7/15/2009	Clovis	WNV	RTPCR
Fresno	CNSL2135	171	Cx tarsalis	50	7/9/2009	7/15/2009	Sanger	WNV	RTPCR
Fresno	CNSL2156	560	Cx tarsalis	50	7/10/2009	7/15/2009	Clovis	WNV	RTPCR
Fresno	CNSL5006	553	Cx quinquefasciatus	28	7/8/2009	7/15/2009	Sanger	WNV	RTPCR
Fresno	CNSL5031	566	Cx quinquefasciatus	26	7/14/2009	7/15/2009	Kingsburg	WNV	RTPCR
Kern	KERN0050	280	Cx tarsalis	50	7/9/2009	7/15/2009	Bakersfield	WNV	RTPCR
Kern	KERN3010	277	Cx quinquefasciatus	22	7/9/2009	7/15/2009	Bakersfield	WNV	RTPCR
Kern	KERN3014	287	Cx tarsalis	41	7/10/2009	7/17/2009	Bakersfield	WNV	RTPCR
Kern	WEST6203	39	Cx tarsalis	50	7/15/2009	7/17/2009	Hwy 119 and Hwy 43	WNV	RTPCR
Kern	WEST6203	42	Cx tarsalis	50	7/15/2009	7/17/2009	Hwy 119 and Hwy 43	WNV	RTPCR
Kings	KNGS3022	92	Cx tarsalis	50	7/10/2009	7/17/2009	Hanford	WNV	RTPCR
Kings	KNGS3035	104	Cx tarsalis	16	7/16/2009	7/17/2009	Hanford	WNV	RTPCR
Kings	KNGS3056	103	Cx quinquefasciatus	31	7/16/2009	7/17/2009	Hardwick	WNV	RTPCR
Kings	KNGS3057	100	Cx tarsalis	48	7/16/2009	7/17/2009	Hanford	WNV	RTPCR
Kings	KNGS4003	94	Cx tarsalis	50	7/10/2009	7/14/2009	Hanford	WNV	RTPCR
Kings	KNGS4003	95	Cx tarsalis	50	7/10/2009	7/14/2009	Hanford	WNV	RTPCR
Kings	KNGS4003	102	Cx tarsalis	31	7/16/2009	7/17/2009	Hanford	WNV	RTPCR
Los Angeles	ANTV3247	9	Cx tarsalis	11	7/14/2009	7/17/2009	Lancaster	WNV	RTPCR
Riverside	RIVR0002	273	Cx tarsalis	50	7/8/2009	7/14/2009	Nuevo	WNV	RTPCR
Sacramento	SAYO4127	2233	Cx tarsalis	1	7/14/2009	7/15/2009	Sacramento	WNV	RTPCR
Sacramento	SAYO4394	2162	Cx tarsalis	50	7/9/2009	7/13/2009	Isleton	WNV	RTPCR
Sacramento	SAYO4394	2168	Cx tarsalis	50	7/9/2009	7/13/2009	Isleton	WNV	RTPCR
Sacramento	SAYO7008	2255	Cx tarsalis	50	7/14/2009	7/15/2009	Isleton	WNV	RTPCR
San Joaquin	SJCM8005	394	Cx pipiens	50	7/9/2009	7/17/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8008	400	Cx tarsalis	24	7/9/2009	7/14/2009	Manteca	WNV	RTPCR
San Joaquin	SJCM8008	401	Cx tarsalis	50	7/9/2009	7/14/2009	Manteca	WNV	RTPCR
San Joaquin	SJCM8018	418	Cx tarsalis	12	7/10/2009	7/17/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8018	430	Cx tarsalis	50	7/14/2009	7/16/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8018	432	Cx tarsalis	50	7/14/2009	7/16/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8018	435	Cx tarsalis	50	7/14/2009	7/16/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8021	445	Cx tarsalis	18	7/14/2009	7/16/2009	Lodi	WNV	RTPCR
San Joaquin	SJCM8076	423	Cx tarsalis	16	7/10/2009	7/14/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8078	460	Cx tarsalis	23	7/14/2009	7/17/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8097	471	Cx pipiens	50	7/14/2009	7/17/2009	Banta	WNV	RTPCR
San Joaquin	SJCM8159	448	Cx tarsalis	50	7/14/2009	7/16/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8159	449	Cx pipiens	50	7/14/2009	7/17/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8159	450	Cx pipiens	50	7/14/2009	7/16/2009	Stockton	WNV	RTPCR
San Joaquin	SJCM8160	415	Cx tarsalis	35	7/9/2009	7/17/2009	Lodi	WNV	RTPCR
Tulare	DLTA6518	381	Cx quinquefasciatus	43	7/10/2009	7/17/2009	Cutler	WNV	RTPCR
Tulare	DLTA8414	366	Cx quinquefasciatus	50	7/9/2009	7/14/2009	Visalia	WNV	RTPCR
Tulare	DLTA8414	369	Cx tarsalis	34	7/9/2009	7/14/2009	Visalia	WNV	RTPCR
Tulare	DLTA9402	400	Cx quinquefasciatus	39	7/15/2009	7/17/2009	Visalia	WNV	RTPCR
Yolo	SAYO3233	2283	Cx tarsalis	50	7/14/2009	7/15/2009	Woodland	WNV	RTPCR
Yolo	SAYO3311	2153	Cx pipiens	5	7/9/2009	7/13/2009	Winters	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Los Angeles	ANTV8656	Lancaster	7/1/2009	WNV	3406	3407
Los Angeles	ANTV3247	Lancaster	7/1/09	WNV	3363	
San Diego	SAND0057	Sorrento Valley	6/30/09	WNV	1638	1640

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NATIONAL COMMENTS

As of July 14, 2009, 8 human cases have been reported nationwide. Two cases have been reported in South Dakota, and one each in Arizona, Arkansas, Idaho, Nevada, Tennessee, and Texas. There have been no fatalities. At this time last year, 28 cases had been reported.

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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