

California Arbovirus Surveillance Bulletin # 29

Week 36 Monday, September 13, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

Three new human cases of West Nile virus (WNV) were reported last week from Kern (1), San Joaquin (1), and Stanislaus (1) counties. In addition, one asymptomatic WNV infection in a blood donor was reported from Calaveras County. To date this year, 38 WNV cases have been reported from 11 counties. Of the 38 individuals, 21 (55%) developed neuroinvasive disease. The median age of the 38 individuals is 54 years (range: 17-89 years); 17 (45%) are male. None of the cases have resulted in fatalities. At this time last year, 34 human cases had been reported from 10 counties.

Horses

Three new horse cases of WNV have been reported from Madera (2) and Solano (1) counties. This is the first detection of WNV activity in Solano County this year. In 2010, 14 horses from 9 counties have tested positive for WNV infection and 4 fatalities have been reported. At this time last year, 8 horse cases of WNV had been reported from 7 counties.

Dead Birds & Squirrels

Twenty five recently-infected* WNV positive dead birds were reported last week from the following 12 counties: Butte (1), El Dorado (1), Glenn (1), Los Angeles (4), Madera (1), Merced (2), Placer (1), Sacramento (7), San Joaquin (1), Santa Clara (2), Stanislaus (2), and Tulare (2). One additional bird from Merced County tested positive for chronic infection with WNV. There were no positive tree squirrels reported last week.

In 2010, 310 recently-infected* WNV positive dead birds have been reported from 24 counties, and 13 WNV positive squirrels have been reported from 7 counties. An additional 120 chronic WNV infections have been detected in birds from 25 counties (see www.westnile.ca.gov for more details). At this time last year, 405 birds from 34 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, 66 WNV positive mosquito pools were reported from the following 10 counties: Fresno (5), Kern (24), Kings (6), Los Angeles (6), Orange (4), Sacramento (2), San Bernardino (1), San Joaquin (5), Stanislaus (10), and Sutter (3). In 2010, 1,098 mosquito pools from 23 counties have tested positive for WNV. At this time last year, 908 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

Last week, 15 WNV seroconversions were reported in 10 flocks from the following 8 counties: Butte (1), Kern (5), Madera (1), Riverside (1), Stanislaus (1), Sutter (3), Tehama (1), and Yuba (2). This is the first detection of WNV activity in Tehama County this year. In 2010, 148 WNV positive chickens have been detected among 41 flocks from 16 counties. At this time last year, 223 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	13,116	8,721
# Positive Counties	40	33
# Human Cases	34	38
# Horse Cases	8	14
# Positive Dead Birds / # Tested	405 / 2,289	310 / 1,753
# Positive Mosquito Pools / # Tested	908 / 20,469	1,098 / 23,046
# Seroconversions / # Tested	223 / 17,984	148 / 19,199
# Positive Squirrels / # Tested	6 / 80	13 / 77

YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds [^]	Mosquito Pools	Sentinel Chickens	Squirrels
Amador		1				
Butte	1		4	5	2	1
Colusa			1		4	
Contra Costa			4	1		
El Dorado			2			
Fresno	11	1	19	114	4	2
Glenn			3			
Imperial				10	12	
Kern	3	1	11	237	48	
Kings				50		
Lake				2		
Los Angeles	1		24	39	2	1
Madera	3	5	11	9	2	
Merced			13	5		
Mono			1			
Orange			6	14		
Placer	1		6	33	2	
Riverside				66	30	
Sacramento	5	2	92	179	4	2
San Bernardino	1		3	27	7	1
San Diego			2	1		
San Joaquin	2	1	26	37		
San Mateo						2
Santa Clara			25	10		4
Santa Cruz			4			
Shasta			2			
Solano		1				
Stanislaus	8	1	28	59	8	
Sutter			1	27	11	
Tehama					1	
Tulare	2	1	16	166	8	
Yolo			6	5		
Yuba				2	3	
Totals	38	14	310	1,098	148	13

[^] 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	7	3	0	0	0	0	0
	YTD	501	38	0	0	0	0	0
Horses Tested	Week	8	3	0	0	0	0	0
	YTD	137	14	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	80	25
	YTD	1,753	310
Tree Squirrels	Week	5	0
	YTD	77	13

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	683	15	0	0
	YTD	19,199	148	0	0
Mosquito Pools: RT-PCR	Week	714	66	0	0
	YTD	22,297	1,081	0	0
Mosquito Pools: RAMP	Week	12	0	N/A	N/A
	YTD	749	17	N/A	N/A

NEW POSITIVES

Humans

WNV Cases							
ID	Report Date	County ¹	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0036	09/07/10	Stanislaus	79	M	WNND	n/a	NO
10-0037	09/08/10	Kern	89	F	WNF	07/29/10	NO
10-0038	09/09/10	San Joaquin	55	M	WNND	08/13/10	NO
Presumptively Viremic Blood Donors (Asymptomatic Infections)							
BD10-0009	09/07/10	Calaveras	75				

¹County of residence

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Dead Birds & Squirrels

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Butte	Butte Co MVCD	Chico	95926	Red-shouldered Hawk	8/25/2010	WNV	Recent	RT-PCR
El Dorado	El Dorado Co Env Mgmt	Shingle Springs	95682	Lesser Goldfinch	8/30/2010	WNV	Recent	RT-PCR
Glenn	Glenn Co MVCD	Orland	95963	Western Scrub-Jay	8/29/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Downey	90241	American Crow	8/26/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	El Monte	91732	American Crow	8/29/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Long Beach	90815	American Crow	8/31/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Hacienda Heights	91745	House Finch	9/1/2010	WNV	Recent	RT-PCR
Madera	Madera Co MVCD	Madera	93638	American Crow	8/31/2010	WNV	Recent	RT-PCR
Merced	Merced Co MAD	Dos Palos	93620	American Crow	8/25/2010	WNV	Chronic	RT-PCR
Merced	Merced Co MAD	Los Banos	93635	Brewer's Blackbird	8/27/2010	WNV	Recent	RT-PCR
Merced	Merced Co MAD	Merced	95348	Yellow-billed Magpie	8/30/2010	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95747	Western Scrub-Jay	8/26/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95838	American Crow	8/24/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Citrus Heights	95621	American Crow	8/25/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Citrus Heights	95610	Yellow-billed Magpie	8/27/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Crow	8/30/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95834	American Crow	8/31/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	American Crow	9/1/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	8/31/2010	WNV	Recent	RT-PCR
San Joaquin	San Joaquin Co MVCD	Ripon	95366	Western Scrub-Jay	9/1/2010	WNV	Recent	RT-PCR
Santa Clara	Santa Clara Co VCD	San Jose	95120	American Crow	8/29/2010	WNV	Recent	VecTest
Santa Clara	Santa Clara Co VCD	Santa Clara	95054	American Crow	9/2/2010	WNV	Recent	VecTest
Stanislaus	Turlock MAD	Turlock	95380	Yellow-billed Magpie	8/30/2010	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Hughson	95326	Yellow-billed Magpie	8/30/2010	WNV	Recent	RT-PCR
Tulare	Delta VCD	Dinuba	93618	American Crow	9/1/2010	WNV	Recent	RT-PCR
Tulare	Delta VCD	Visalia	93292	Scarlett Chested Parakeet	9/1/2010	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in pool	City	Collected	Virus	Method
Fresno	CNSL1002	557	Culex quinquefasciatus	50	Fresno	9/1/2010	WNV	RTPCR
Fresno	CNSL1609	556	Culex quinquefasciatus	17	Fresno	9/2/2010	WNV	RTPCR
Fresno	CNSL2413	634	Culex restuans	24	Sanger	9/1/2010	WNV	RTPCR
Fresno	CNSL2413	635	Culex stigmatosoma	50	Sanger	9/1/2010	WNV	RTPCR
Fresno	CNSL6215	641	Culex quinquefasciatus	50	Caruthers	9/3/2010	WNV	RTPCR
Kern	KERN2010	1107	Culex quinquefasciatus	50	Bakersfield	9/3/2010	WNV	RTPCR
Kern	KERN2014	1106	Culex quinquefasciatus	50	Bakersfield	9/3/2010	WNV	RTPCR
Kern	KERN2021	1097	Culex quinquefasciatus	50	Wasco	9/2/2010	WNV	RTPCR
Kern	KERN2021	1098	Culex quinquefasciatus	50	Wasco	9/2/2010	WNV	RTPCR
Kern	KERN2031	1105	Culex quinquefasciatus	50	Bakersfield	9/3/2010	WNV	RTPCR
Kern	KERN2049	1066	Culex quinquefasciatus	39	Lamont	9/1/2010	WNV	RTPCR
Kern	KERN3014	1041	Culex quinquefasciatus	48	Bakersfield	8/31/2010	WNV	RTPCR
Kern	KERN3014	1042	Culex tarsalis	49	Bakersfield	8/31/2010	WNV	RTPCR
Kern	KERN3016	1123	Culex tarsalis	50	Bakersfield	9/3/2010	WNV	RTPCR
Kern	KERN3022	1094	Culex quinquefasciatus	50	Wasco	9/2/2010	WNV	RTPCR
Kern	KERN3027	1046	Culex quinquefasciatus	44	Arvin	8/31/2010	WNV	RTPCR
Kern	KERN3027	1047	Culex tarsalis	50	Arvin	8/31/2010	WNV	RTPCR
Kern	KERN3030	1091	Culex quinquefasciatus	50	Shafter	9/2/2010	WNV	RTPCR

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Kern	KERN3030	1092	Culex quinquefasciatus	50	Shafter	9/2/2010	WNV	RTPCR
Kern	KERN3031	1043	Culex quinquefasciatus	50	Shafter	8/31/2010	WNV	RTPCR
Kern	KERN3031	1044	Culex quinquefasciatus	50	Shafter	8/31/2010	WNV	RTPCR
Kern	KERN3032	1050	Culex quinquefasciatus	50		8/31/2010	WNV	RTPCR
Kern	KERN31	1080	Culex tarsalis	50	Arvin	9/1/2010	WNV	RTPCR
Kern	KERN31	1081	Culex tarsalis	50	Arvin	9/1/2010	WNV	RTPCR
Kern	KERN33	1088	Culex tarsalis	50	Arvin	9/1/2010	WNV	RTPCR
Kern	KERN39	1075	Culex quinquefasciatus	32	Shafter	9/1/2010	WNV	RTPCR
Kern	KERN44	1090	Culex quinquefasciatus	37	Shafter	9/2/2010	WNV	RTPCR
Kern	KERN60	1048	Culex tarsalis	50	Bakersfield	8/31/2010	WNV	RTPCR
Kern	KERN83	1082	Culex quinquefasciatus	50	Arvin	9/1/2010	WNV	RTPCR
Kings	KNGS3025	626	Culex pipiens	43	Hanford	9/2/2010	WNV	RTPCR
Kings	KNGS3035	627	Culex pipiens	7	Hanford	9/2/2010	WNV	RTPCR
Kings	KNGS3051	622	Culex pipiens	22	Lemoore	9/1/2010	WNV	RTPCR
Kings	KNGS4003	630	Culex tarsalis	50	Hanford	9/2/2010	WNV	RTPCR
Kings	KNGS4003	631	Culex tarsalis	44	Hanford	9/2/2010	WNV	RTPCR
Kings	KNGS4009	603	Culex pipiens	8	Armona	9/1/2010	WNV	RTPCR
Los Angeles	GRLA2094	1453	Culex quinquefasciatus	43	Whittier	9/2/2010	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	GRLA2650	6274	Culex quinquefasciatus	44	Encino	9/2/2010	WNV	RTPCR
Los Angeles	GRLA3048	1448	Culex quinquefasciatus	20	Pico Rivera	9/2/2010	WNV	RTPCR
Orange	ORCO33	1406	Culex quinquefasciatus	42	Westminster	8/24/2010	WNV	RTPCR
Orange	ORCO50	1391	Culex quinquefasciatus	29	Buena Park	8/20/2010	WNV	RTPCR
Orange	ORCO50	1431	Culex quinquefasciatus	10	Buena Park	8/31/2010	WNV	RTPCR
Orange	ORCO93	1396	Culex quinquefasciatus	28	Fullerton	8/20/2010	WNV	RTPCR
Sacramento	SAYO223026	4935	Culex tarsalis	6	Sacramento	9/8/2010	WNV	RTPCR
Sacramento	SAYO233009	4931	Culex pipiens	1	Elk Grove	9/8/2010	WNV	RTPCR
San Bernardino	WVAL6007	807	Culex quinquefasciatus	44		8/30/2010	WNV	RTPCR
San Joaquin	SJCM8008	656	Culex tarsalis	50	Manteca	9/8/2010	WNV	RTPCR
San Joaquin	SJCM8010	622	Culex tarsalis	15	Ripon	8/31/2010	WNV	RTPCR
San Joaquin	SJCM8100	618	Culex tarsalis	25	Tracy	8/31/2010	WNV	RTPCR
San Joaquin	SJCM8154	641	Culex tarsalis	25	Lathrop	9/8/2010	WNV	RTPCR
San Joaquin	SJCM9906	594	Culex tarsalis	50	French Camp	8/31/2010	WNV	RTPCR
Stanislaus	TRLK305	783	Culex tarsalis	50	Grayson	9/8/2010	WNV	RTPCR
Stanislaus	TRLK306	793	Culex tarsalis	40	Grayson	9/8/2010	WNV	RTPCR
Stanislaus	TRLK704	727	Culex pipiens	16	Turlock	9/8/2010	WNV	RTPCR
Stanislaus	TRLK718	728	Culex pipiens	50	Turlock	9/8/2010	WNV	RTPCR
Stanislaus	TRLK718	730	Culex tarsalis	46	Turlock	9/8/2010	WNV	RTPCR
Stanislaus	TRLK9768	772	Culex tarsalis	50	Grayson	9/8/2010	WNV	RTPCR
Stanislaus	TRLK9768	773	Culex tarsalis	50	Grayson	9/8/2010	WNV	RTPCR
Stanislaus	TRLK9768	774	Culex tarsalis	50	Grayson	9/8/2010	WNV	RTPCR
Stanislaus	TRLK9769	770	Culex tarsalis	50	Grayson	9/8/2010	WNV	RTPCR
Stanislaus	TRLK9769	771	Culex pipiens	23	Grayson	9/8/2010	WNV	RTPCR
Sutter	SUYA31	362	Culex tarsalis	50	Rio Oso	9/7/2010	WNV	RTPCR
Sutter	SUYA44	345	Culex tarsalis	50	Pleasant Grove	8/30/2010	WNV	RTPCR
Sutter	SUYA84	359	Culex pipiens	26	Yuba City	9/2/2010	WNV	RTPCR

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Butte	BUCO0007	Chico	8/30/2010	WNV	1186		
Kern	DLNO0021	Earlimart	9/2/2010	WNV	1489		
Kern	DLNO0035		9/2/2010	WNV	1476	1478	1482
Kern	DLNO0060	Delano	9/2/2010	WNV	1509		
Madera	MADR4123	Chowchilla	9/7/2010	WNV	2119		
Riverside	COAV0200	Mecca	9/7/2010	WNV	1252		
Stanislaus	TRLK9701	Grayson	9/2/2010	WNV	3408		
Sutter	SUYA0014	Sutter	9/2/2010	WNV	3324	3325	3327
Tehama	TEHA0001	Red Bluff	9/1/2010	WNV	3383		
Yuba	SUYA0010	Olivehurst	9/2/2010	WNV	3282	3287	

NATIONAL COMMENTS

As of September 7, 2010, 258 human cases of WNV had been reported nationwide in 30 states: Alabama (3), Arizona (77), Arkansas (2), California (35), Colorado (10), Connecticut (4), Florida (2), Georgia (6), Illinois (1), Indiana (2), Iowa (1), Kansas (2), Louisiana (7), Maryland (4), Massachusetts (1), Michigan (4), Minnesota (3), Mississippi (4), Missouri (2), Nebraska (13), New Jersey (3), New Mexico (3), New York (38), North Dakota (4), Ohio (2), Pennsylvania (1), South Dakota (13), Texas (7), Wisconsin (1), and Wyoming (3). Of the 258 cases, 144 (56%) had neuroinvasive disease. Six WNV-related fatalities have been reported in Arizona.

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.

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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
