

California Arbovirus Surveillance Bulletin #35

Week 41 Friday, October 14, 2011



WEEKLY UPDATE

Human Cases

Nine new human cases of West Nile virus (WNV) were reported this week from Amador (1), Contra Costa (1), Fresno (2), Los Angeles (3), Orange (1), and San Bernardino (1) counties. This is the first detection of WNV activity in Amador County in 2011. To date this year, 113 WNV cases have been reported from 20 counties; of the 113 cases, 78 (69%) developed neuroinvasive disease. The median age for all cases is 57 years (range: 14-87 years) and 69 (61%) are male. Five fatalities have been reported from Los Angeles (3) and Kern (2) counties. Additionally, 21 WNV-positive blood donors have been reported this year; 8 of the individuals subsequently developed symptoms and were reclassified as cases. At this time last year, 68 WNV cases had been reported from 12 counties.

National Activity: As of October 11, 2011, 474 human cases of WNV had been reported nationwide in 41 states and the District of Columbia: Alabama (1), Arizona (29), Arkansas (1), California (104), Colorado (2), Connecticut (9), Delaware (1), District of Columbia (1), Florida (18), Georgia (8), Idaho (1), Illinois (18), Indiana (7), Iowa (7), Kansas (1), Kentucky (3), Louisiana (8), Maryland (19), Massachusetts (3), Michigan (29), Minnesota (2), Mississippi (47), Missouri (7), Montana (1), Nebraska (23), Nevada (16), New Jersey (4), New Mexico (2), New York (36), North Carolina (2), North Dakota (4), Ohio (17), Pennsylvania (5), Rhode Island (1), Tennessee (14), Texas (9), Utah (1), Vermont (1), Virginia (7), West Virginia (1), Wisconsin (1), and Wyoming (3). Of the 474 cases, 318 (67%) developed neuroinvasive disease. As of October 11, 2011, a total of 28 WNV-related fatalities had been reported in Arizona (2), California (4), Florida (2), Georgia (1), Illinois (2), Indiana (1), Kansas (1), Michigan (2), Minnesota (1), Mississippi (4), Nevada (1), New York (2), Ohio (1), Pennsylvania (1), Tennessee (1), Texas (1), and Virginia (1).

Horses

Two equine cases of WNV were reported this week from Placer (1) and Yolo (1) counties; one horse was euthanized as a result of her illness. In 2011, 12 horses from 7 counties have tested positive for WNV, and two fatalities have been reported. At this time last year, 18 cases of WNV had been reported among horses from 11 counties.

Dead Birds & Squirrels

Thirty WNV positive dead birds were reported this week from 9 counties: Contra Costa (5), Kings (2), Los Angeles (1), Sacramento (8), San Joaquin (2), Santa Clara (4), Stanislaus (5), Tulare (2), and Yolo (1). In addition, two tree squirrels tested positive for WNV from Los Angeles County. To date this year, 617 dead birds from 25 counties and 17 tree squirrels from 4 counties have tested positive for WNV. An additional 116 birds have tested positive for chronic* WNV infection from 27 counties.

At this time last year, 390 birds from 27 counties, and 20 tree squirrels from 8 counties had tested positive for WNV.

**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 WNV 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

Thirty-two WNV positive mosquito pools were reported this week from the following 8 counties: Contra Costa (1), Fresno (2), Kern (7), Orange (1), Riverside (1), San Bernardino (15), Santa Clara (1), and Stanislaus (4). In 2011, 2,002 mosquito pools from 25 counties have tested positive for WNV.

At this time last year, 1,284 mosquito pools from 24 counties had tested positive for WNV.

Sentinel Chickens

Fifteen WNV seroconversions were reported this week from 11 flocks in the following 3 counties: Los Angeles (8), Riverside (6), and San Bernardino. To date this year, 311 WNV positive chickens have been detected among 63 flocks in 15 counties.

At this time last year, 264 chickens (59 flocks) had tested positive for WNV from 20 counties.

Website Information: For updated information on WNV in California, please visit the California WNV website, www.westmile.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.westmilemaps.usgs.gov

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2010 & 2011 YTD West Nile Virus Comparisons		
	2010	2011
Total # Dead Bird Reports	9,710	8,938
# Positive Counties	35	33
# Human Cases	68	113
# Horse Cases	18	12
# Positive Dead Birds / # Tested	390 / 2,017	617 / 2,198
# Positive Mosquito Pools / # Tested	1,284 / 28,734	2,002 / 30,088
# Seroconversions / # Tested	264 / 23,305	311 / 19,619
# Positive Squirrels / # Tested	20 / 98	17 / 90

YTD WNV Activity by Element and County, 2011

County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens	Squirrels
Amador	1					
Butte	3			1	14	
Contra Costa	3		32	7		
El Dorado	1		1			
Fresno	7	5	15	123		
Glenn	1		2		5	
Imperial				3	3	
Inyo				2		
Kern	13	1	3	376	122	
Kings			7	63		
Lake			1	3		
Los Angeles	46	1	208	433	53	14
Madera	1		3	5		
Merced	1	1	8	11	6	
Nevada			1			
Orange	6		39	87		1
Placer	1	2	9	48	5	
Riverside	3		6	52	33	
Sacramento	1		128	378	5	1
San Bernardino	3		28	128	40	
San Diego				1		
San Joaquin	3		21	49		
Santa Barbara	1					
Santa Clara			29	16		1
Shasta				1		
Solano					1	
Stanislaus	9		23	99	7	
Sutter			1	26	7	
Tehama			1			
Tulare	8	1	41	82	6	
Ventura			1			
Yolo		1	8	7		
Yuba	1		1	1	4	
Totals	113	12	617	2,002	311	17

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TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	9	0	0	0	0	0
	YTD	113	0	0	0	0	0
Horse Cases	Week	2	0	0	0	0	0
	YTD	12	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	63	30
	YTD	2,198	617
Tree Squirrels	Week	5	2
	YTD	90	17

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	773	15	0	0
	YTD	19,619	311	0	0
Mosquito Pools: RT-PCR	Week	646	30	0	0
	YTD	29,777	1,983	0	0
Mosquito Pools: RAMP	Week	29	2	N/A	N/A
	YTD	311	19	N/A	N/A

NEW POSITIVES

Humans

WNV Cases							
ID	Report Date	County	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
11-0105	10/10/11	Fresno	49	M	WNF	09/16/11	NO
11-0106	10/11/11	Fresno	52	M	WNF	09/01/11	NO
11-0107	10/11/11	Amador	>18	n/a	WNND	09/14/11	NO
11-0108	10/13/11	Los Angeles	87	M	WNND	10/01/11	YES
11-0109	10/13/11	Los Angeles	66	M	WNND	09/15/11	NO
11-0110	10/13/11	Los Angeles	65	F	WNF	09/21/11	NO
11-0111	10/12/11	Contra Costa	>18	F	WNND	09/28/11	NO
11-0112	10/13/11	San Bernardino	75	M	WNND	09/11/11	NO
11-0113	10/13/11	Orange	30	F	WNND	WEEK 38	NO
Presumptive Viremic Blood Donors (Asymptomatic Infections)							
BD11-0015	10/11/11	Riverside	53	M			
BD11-0016	10/12/11	Riverside	38	F			

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Dead Birds

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Contra Costa	Contra Costa MVCD	Pleasant Hill	94523	American Crow	10/4/2011	WNV	Recent	RAMP
Contra Costa	Contra Costa MVCD	Concord	94521	American Crow	10/5/2011	WNV	Recent	RAMP
Contra Costa	Contra Costa MVCD	Concord	94520	American Crow	10/4/2011	WNV	Recent	RAMP
Contra Costa	Contra Costa MVCD	Oakley	94561	American Crow	10/5/2011	WNV	Recent	RAMP
Contra Costa	Contra Costa MVCD	Concord	94518	American Crow	10/7/2011	WNV	Recent	RAMP
Kings	Kings MAD	Hanford	93230	American Crow	9/26/2011	WNV	Recent	RT-PCR
Kings	Kings MAD	Lemoore	93245	American Kestrel	9/29/2011	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Sherman Oaks	91423	Fox Squirrel	9/26/2011	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Woodland Hills	91367	Fox Squirrel	9/28/2011	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Lomita	90717	American Crow	9/28/2011	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Simi Valley	93063	American Crow	9/23/2011	WNV	Chronic	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90036	American Crow	9/26/2011	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95758	American Crow	9/22/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95838	Western Scrub-Jay	9/28/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Antelope	95843	American Crow	9/30/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	Yellow-billed Magpie	10/1/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	10/2/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	Western Scrub-Jay	10/3/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95811	American Crow	10/3/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95816	American Crow	10/4/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	Yellow-billed Magpie	9/28/2011	WNV	Chronic	RT-PCR
San Joaquin	San Joaquin Co MVCD	Stockton	95204	American Crow	9/28/2011	WNV	Recent	RT-PCR
San Joaquin	San Joaquin Co MVCD	Manteca	95337	Western Scrub-Jay	9/29/2011	WNV	Recent	RT-PCR
Santa Clara	Santa Clara Co VCD	San Jose	95123	American Crow	10/3/2011	WNV	Recent	VecTest
Santa Clara	Santa Clara Co VCD	San Jose	95125	American Crow	10/3/2011	WNV	Recent	VecTest
Santa Clara	Santa Clara Co VCD	Sunnyvale	94087	American Crow	10/4/2011	WNV	Recent	VecTest
Santa Clara	Santa Clara Co VCD	San Jose	95131	American Crow	10/7/2011	WNV	Recent	VecTest
Solano	Solano Co MAD	Dixon	95620	American Crow	9/28/2011	WNV	Chronic	RT-PCR
Stanislaus	Turlock MAD	Hughson	95326	Western Scrub-Jay	9/28/2011	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Keyes	95328	Yellow-billed Magpie	9/28/2011	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Turlock	95380	American Crow	9/29/2011	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Turlock	95380	American Crow	9/29/2011	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Turlock	95380	American Crow	10/3/2011	WNV	Recent	RT-PCR
Tulare	Delta VCD	Visalia	93277	American Crow	9/30/2011	WNV	Recent	RT-PCR
Tulare	Delta VCD	Visalia	93291	Western Scrub-Jay	10/4/2011	WNV	Recent	RT-PCR
Yolo	Sacramento-Yolo MVCD	Davis	95616	Western Scrub-Jay	10/5/2011	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in Pool	City	Collected	Virus	Method
Contra Costa	CNTR3966	445	Cx. pipiens	15	Brentwood	10/12/2011	WNV	RAMP
Fresno	CNSL1045	775	Cx. quinquefasciatus	17	Fresno	10/11/2011	WNV	RTPCR
Fresno	CNSL2406	770	Cx. stigmatosoma	50	Sanger	10/7/2011	WNV	RTPCR
Kern	KERN0115	2684	Cx. tarsalis	50	Bakersfield	10/4/2011	WNV	RTPCR
Kern	KERN0115	2686	Cx. quinquefasciatus	50	Bakersfield	10/4/2011	WNV	RTPCR
Kern	KERN2030	2715	Cx. quinquefasciatus	42	Bakersfield	10/5/2011	WNV	RTPCR
Kern	KERN3031	2680	Cx. quinquefasciatus	50	Shafter	10/4/2011	WNV	RTPCR
Kern	KERN3041	2675	Cx. tarsalis	26	Bakersfield	10/4/2011	WNV	RTPCR
Kern	KERN0043	2733	Cx. quinquefasciatus	36	Shafter	10/6/2011	WNV	RTPCR
Kern	KERN0045	2716	Cx. tarsalis	15	Buttonwillow	10/5/2011	WNV	RTPCR
Orange	ORCO0003	1318	Cx. quinquefasciatus	29	Garden Grove	10/4/2011	WNV	RTPCR
Riverside	COAV0321	2536	Cx. quinquefasciatus	21	Rancho Mirage	10/7/2011	WNV	RTPCR
San Bernardino	SANB0017	797	Cx. tarsalis	43	Fontana	9/14/2011	WNV	RTPCR
San Bernardino	SANB0017	803	Cx. quinquefasciatus	50	Fontana	9/14/2011	WNV	RTPCR
San Bernardino	SANB0004	715	Cx. erythrothorax	5	San Bernadino	9/8/2011	WNV	RTPCR
San Bernardino	SANB0004	773	Cx. tarsalis	50	San Bernadino	9/14/2011	WNV	RTPCR
San Bernardino	SANB0004	809	Cx. tarsalis	49	San Bernadino	9/21/2011	WNV	RTPCR
San Bernardino	SANB0008	817	Cx. tarsalis	13	Upland	9/28/2011	WNV	RTPCR
San Bernardino	SANB0008	818	Cx. quinquefasciatus	20	Upland	9/28/2011	WNV	RTPCR
San Bernardino	WVAL1007	903	Cx. quinquefasciatus	50	Ontario	10/3/2011	WNV	RTPCR
San Bernardino	WVAL2009	900	Cx. quinquefasciatus	47	Ontario	10/3/2011	WNV	RTPCR
San Bernardino	WVAL5005	919	Cx. quinquefasciatus	43	Rancho Cucamonga	10/3/2011	WNV	RTPCR
San Bernardino	WVAL6003	893	Cx. quinquefasciatus	28	Ontario	10/3/2011	WNV	RTPCR

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San Bernardino	WVAL6003	894	Cx. quinquefasciatus	50	Ontario	10/3/2011	WNV	RTPCR
San Bernardino	WVAL6005	897	Cx. quinquefasciatus	50	Ontario	10/3/2011	WNV	RTPCR
San Bernardino	WVAL6005	898	Cx. quinquefasciatus	50	Ontario	10/3/2011	WNV	RTPCR
San Bernardino	WVAL7002	913	Cx. quinquefasciatus	10	Montclair	10/3/2011	WNV	RTPCR
Santa Clara	STCL2867	4127	Cx. pipiens	10	San Jose	10/13/2011	WNV	RTPCR
Stanislaus	EAST1077	11204	Cx. pipiens	50	Modesto	10/13/2011	WNV	RAMP
Stanislaus	TRLK1108	1010	Cx. pipiens	50	Crows Landing	10/11/2011	WNV	RTPCR
Stanislaus	TRLK0524	998	Cx. pipiens	50	Keyes	10/11/2011	WNV	RTPCR
Stanislaus	TRLK0524	999	Cx. pipiens	50	Keyes	10/11/2011	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Los Angeles	ANTV2667	Palmdale	10/5/2011	WNV	1059	
Los Angeles	ANTV7263	Lancaster	10/5/2011	WNV	1040	1042
Los Angeles	ANTV7947	Palmdale	10/5/2011	WNV	1048	
Los Angeles	GRLA2056	Long Beach	10/3/2011	WNV	1504	
Los Angeles	GRLA2223	Rowland Heights	10/3/2011	WNV	3637	
Los Angeles	GRLA2465	Los Angeles	10/3/2011	WNV	1547	1549
Riverside	COAV0035	Mecca	10/3/2011	WNV	1306	
Riverside	COAV0122	Mecca	10/3/2011	WNV	1261	1267
Riverside	COAV0200	Mecca	10/3/2011	WNV	1241	1247
Riverside	RIVR0001	San Jacinto	10/4/2011	WNV	2296	
San Bernardino	SANB0007	Fontana	10/3/2011	WNV	2567	

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.

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.

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 (WEEV), and St. Louis encephalitis (SLEV) 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 WEEV, SLEV, 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.