

California Arbovirus Surveillance Bulletin # 32

Week 39 Friday, October 1, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

Ten new human cases of West Nile virus (WNV) were reported this week from Fresno (3), Glenn (2), Kern (1), San Joaquin (1), and Tulare (3) counties. These are the first cases reported from Glenn County in 2010. In addition, 4 asymptomatic WNV infections were reported in blood donors from Fresno (2), Tulare (1), and Yuba (1) counties. To date this year, 61 WNV cases have been reported from 11 counties. Of the 61 individuals, 39 (64%) developed neuroinvasive disease. The median age for all cases for which data are available is 56 years (range: 17-89 years); 31 (51%) are male. One fatality has been reported from Fresno County. At this time last year, 68 human cases had been reported from 15 counties.

Horses

No new horse cases were reported this week. In 2010, 16 horses from 9 counties have tested positive for WNV infection and 4 fatalities have been reported. At this time last year, 13 horse cases of WNV had been reported from 9 counties.

Dead Birds & Squirrels

Fifteen recently-infected* WNV positive dead birds were reported this week from the following 4 counties: Contra Costa (2), Los Angeles (3), Sacramento (7), and San Bernardino (3). Eleven additional birds from nine counties tested positive for chronic infection with WNV. Four WNV positive tree squirrels were reported this week from Orange (1), San Bernardino (1) and Santa Clara (2) counties; this is the first WNV positive squirrel reported from Orange County this year.

In 2010, 374 recently-infected* WNV positive dead birds have been reported from 25 counties, and 20 WNV positive squirrels have been reported from 8 counties. An additional 157 chronic WNV infections have been detected in birds from 28 counties (see www.westnile.ca.gov for more details). At this time last year, 457 birds from 35 counties and 9 tree squirrels from 7 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

Forty-two WNV positive mosquito pools were reported this week from the following 12 counties: Fresno (3), Kern (6), Los Angeles (1), Merced (1), Placer (1), Sacramento (7), San Bernardino (4), San Joaquin (7), Solano (1), Stanislaus (7), Sutter (1), and Yolo (3). This is the first WNV positive mosquito pool detected in Solano County this year. In 2010, 1,259 mosquito pools from 24 counties have tested positive for WNV. At this time last year, 1,034 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

Twenty-two WNV seroconversions were reported in 16 flocks from the following 10 counties: Fresno (3), Imperial (2), Kern (5), Madera (2), Riverside (1), Sacramento (1), San Joaquin (1), Solano (1), Sutter (1), and Tulare (5). This is the first WNV seroconversion detected in San Joaquin County this year. In 2010, 241 WNV positive chickens have been detected among 57 flocks within 20 counties. At this time last year, 330 WNV positive chickens from 20 counties had been reported.

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2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	13,970	9,354
# Positive Counties	41	34
# Human Cases	68	61
# Horse Cases	13	16
# Positive Dead Birds / # Tested	457 / 2,457	374 / 1,921
# Positive Mosquito Pools / # Tested	1,034 / 23,546	1,259 / 26,850
# Seroconversions / # Tested	330 / 20,302	241 / 21,960
# Positive Squirrels / # Tested	9 / 86	20 / 88

YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds [^]	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			1			
Amador		1				
Butte	1		6	7	6	1
Colusa			1		4	
Contra Costa			6	4	2	
El Dorado			2			
Fresno	20	3	22	129	7	2
Glenn	2		3			
Imperial				10	14	
Kern	7	1	11	265	78	
Kings				62		
Lake				2		
Los Angeles			32	52	2	1
Madera	5	5	13	9	8	
Merced			14	9	6	
Mono			1			
Orange			12	17		1
Placer	3		7	34	3	
Riverside				68	35	
Sacramento	5	2	109	198	6	2
San Bernardino	1		9	36	10	2
San Diego			2	1		
San Joaquin	4	1	26	49	1	
San Mateo						5
Santa Clara			27	10		6
Santa Cruz			4			
Shasta			3			
Solano		1		1	2	
Stanislaus	8	1	32	85	14	
Sutter			1	31	12	
Tehama					1	
Tulare	5	1	20	168	25	
Yolo			10	10		
Yuba				2	5	
Totals	61	16	374	1,259	241	20

[^] 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	29	10	0	0	0	0	0
	YTD	569	61	0	0	0	0	0
Horses Tested	Week	7	0	0	0	0	0	0
	YTD	155	16	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	44	15
	YTD	1,921	374
Tree Squirrels	Week	5	4
	YTD	88	20

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	1,086	22	0	0
	YTD	21,960	241	0	0
Mosquito Pools: RT-PCR	Week	986	42	0	0
	YTD	25,866	1,240	0	0
Mosquito Pools: RAMP	Week	14	0	N/A	N/A
	YTD	984	19	N/A	N/A

NEW POSITIVES

Humans

WNV Cases							
ID	Report Date	County ¹	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0053	09/23/10	Tulare	69	M	WNND	n/a	NO
10-0054	09/24/10	San Joaquin	65	M	WNND	09/03/10	NO
10-0055	09/23/10	Tulare	54	M	WNND	08/21/10	NO
10-0056	09/23/10	Tulare	82	F	WNND	n/a	NO
10-0057	09/29/10	Glenn	>18	M	WNF	n/a	NO
10-0058	09/29/10	Glenn	>18	F	WNF	n/a	NO
10-0059	09/28/10	Fresno	23	F	WNF	08/14/10	NO
10-0060	09/30/10	Kern	67	F	WNND	08/20/10	NO
10-0061	09/30/10	Fresno	46	M	WNND	09/13/10	NO
10-0062	09/30/10	Fresno	74	M	WNND	09/17/10	NO
Presumptively Viremic Blood Donors (Asymptomatic Infections)							
BD10-0011	10/1/10	Tulare	68	F			
BD10-0012	10/1/10	Fresno	33	F			
BD10-0013	10/1/10	Fresno	50	F			
BD10-0014	10/1/10	Yuba	n/a	M			

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	Oroville	95965	House Sparrow	9/15/2010	WNV	Chronic	RT-PCR
Contra Costa	Contra Costa MVCD	Oakley	94561	American Crow	9/22/2010	WNV	Recent	RAMP
Contra Costa	Contra Costa MVCD	Brentwood	94513	American Crow	9/28/2010	WNV	Recent	RAMP
Fresno	Consolidated MAD	Fresno	93720	House Sparrow	9/7/2010	WNV	Chronic	RT-PCR
Fresno	Consolidated MAD	Fresno	93710	Mourning Dove	9/13/2010	WNV	Chronic	RT-PCR
Los Angeles	Antelope Valley MVCD	Palmdale	93551	California Quail	9/21/2010	WNV	Chronic	RT-PCR
Los Angeles	Greater LA Co VCD - SFS	Whittier	90601	American Crow	9/21/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Reseda	91335	American Crow	9/17/2010	WNV	Chronic	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Santa Monica	90401	Cooper's Hawk	9/16/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	La Puente	91746	American Crow	9/21/2010	WNV	Recent	RT-PCR
Merced	Merced Co MAD	Atwater	95301	House Finch	9/22/2010	WNV	Chronic	RT-PCR
Orange	Orange Co. VCD	Fullerton	92832	Fox Squirrel	9/23/2010	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95747	Horned Lark	9/17/2010	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Fair Oaks	95628	American Crow	9/17/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	9/17/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95758	Western Scrub-Jay	9/20/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	9/21/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Rancho Cordova	95670	American Crow	9/21/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	Western Scrub-Jay	9/21/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	Western Scrub-Jay	9/16/2010	WNV	Recent	RT-PCR
San Bernardino	San Bernardino	Running Springs	92382	Fox Squirrel	9/14/2010	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	San Bernardino	92404	American Crow	8/12/2010	WNV	Recent	RT-PCR
San Bernardino	San Bernardino VCP	Upland	91784	Western Scrub-Jay	9/3/2010	WNV	Recent	RT-PCR
San Bernardino	West Valley MVCD	Chino	91710	American Crow	9/17/2010	WNV	Recent	RT-PCR
San Mateo	San Mateo Co MAD	Menlo Park	94025	Western Scrub-Jay	9/15/2010	WNV	Chronic	RT-PCR
Santa Clara	Santa Clara	San Jose	95124	Eastern Gray Squirrel	9/21/2010	WNV	Recent	RT-PCR
Santa Clara	Santa Clara	Mountain View	94043	Eastern Gray Squirrel	9/21/2010	WNV	Recent	RT-PCR
Santa Clara	Santa Clara Co VCD	Saratoga	95070	Screech Owl	9/21/2010	WNV	Chronic	RT-PCR
Shasta	Shasta MVCD	Redding	96001	House Finch	9/22/2010	WNV	Chronic	RT-PCR
Ventura	Ventura Co Env Health Dept	Simi Valley	93063	Cooper's Hawk	9/9/2010	WNV	Chronic	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in pool	City	Collected	Virus	Method
Fresno	FRWS410003	190	Culex quinquefasciatus	50	Kerman	9/24/2010	WNV	RTPCR
Fresno	FRWS4102	185	Culex tarsalis	50	Kerman	9/24/2010	WNV	RTPCR
Fresno	FRWS4102	186	Culex quinquefasciatus	47	Kerman	9/24/2010	WNV	RTPCR
Kern	KERN11	1289	Culex quinquefasciatus	50	Bakersfield	9/24/2010	WNV	RTPCR
Kern	KERN3022	1280	Culex tarsalis	50	Wasco	9/23/2010	WNV	RTPCR
Kern	KERN31	1262	Culex tarsalis	46	Arvin	9/22/2010	WNV	RTPCR
Kern	KERN33	1272	Culex quinquefasciatus	50	Arvin	9/22/2010	WNV	RTPCR
Kern	KERN42	1254	Culex quinquefasciatus	50	Bakersfield	9/21/2010	WNV	RTPCR
Kern	KERN42	1255	Culex quinquefasciatus	50	Bakersfield	9/21/2010	WNV	RTPCR
Los Angeles	GRLA2247	1591	Culex quinquefasciatus	50	Pico Rivera	9/24/2010	WNV	RTPCR
Merced	MERC403	82	Culex pipiens	43	Hilmar	9/15/2010	WNV	RTPCR
Placer	PLCR1114	1233	Culex tarsalis	44	Lincoln	9/28/2010	WNV	RTPCR
Sacramento	SAYO205003	5552	Culex pipiens	16	Orangevale	9/28/2010	WNV	RTPCR
Sacramento	SAYO213004	5494	Culex pipiens	3	Sacramento	9/24/2010	WNV	RTPCR
Sacramento	SAYO232012	5440	Culex pipiens	50	Elk Grove	9/24/2010	WNV	RTPCR
Sacramento	SAYO232013	5510	Culex tarsalis	5	Elk Grove	9/24/2010	WNV	RTPCR
Sacramento	SAYO234002	5434	Culex tarsalis	29	Elk Grove	9/24/2010	WNV	RTPCR
Sacramento	SAYO234010	5491	Culex pipiens	2	Sacramento	9/24/2010	WNV	RTPCR

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Sacramento	SAYO280001	5421	Culex tarsalis	50	Emmaton	9/23/2010	WNV	RTPCR
San Bernardino	SANB12	669	Culex tarsalis	50	Grand Terrace City Hall	9/9/2010	WNV	RTPCR
San Bernardino	SANB12	671	Culex tarsalis	50	Grand Terrace City Hall	9/9/2010	WNV	RTPCR
San Bernardino	SANB4	722	Culex tarsalis	40	San Bernadino	9/23/2010	WNV	RTPCR
San Bernardino	SANB9	632	Culex erythrothorax	50	Victorville	9/1/2010	WNV	RTPCR
San Joaquin	SJCM8008	817	Culex tarsalis	50	Manteca	9/28/2010	WNV	RTPCR
San Joaquin	SJCM8010	838	Culex pipiens	43	Ripon	9/28/2010	WNV	RTPCR
San Joaquin	SJCM8026	799	Culex tarsalis	45	Stockton	9/28/2010	WNV	RTPCR
San Joaquin	SJCM8056	828	Culex tarsalis	36	Manteca	9/28/2010	WNV	RTPCR
San Joaquin	SJCM8161	807	Culex pipiens	50	Ripon	9/28/2010	WNV	RTPCR
San Joaquin	SJCM8185	841	Culex pipiens	20	Manteca	9/28/2010	WNV	RTPCR
San Joaquin	SJCM9906	854	Culex pipiens	21	French Camp	9/28/2010	WNV	RTPCR
Solano	SOLA0	28	Unknown	50	Fairfield	9/30/2010	WNV	RTPCR
Stanislaus	TRLK407	1051	Culex pipiens	50	Turlock	9/28/2010	WNV	RTPCR
Stanislaus	TRLK407	1052	Culex pipiens	50	Turlock	9/28/2010	WNV	RTPCR
Stanislaus	TRLK421	1084	Culex pipiens	50	Hughson	9/28/2010	WNV	RTPCR
Stanislaus	TRLK525	1089	Culex pipiens	42	Hughson	9/28/2010	WNV	RTPCR
Stanislaus	TRLK526	1075	Culex pipiens	47	Denair	9/28/2010	WNV	RTPCR
Stanislaus	TRLK536	1058	Culex pipiens	50	Turlock	9/28/2010	WNV	RTPCR
Stanislaus	TRLK538	1093	Culex pipiens	46	Hughson	9/28/2010	WNV	RTPCR
Sutter	SUYA22	389	Culex pipiens	28	Tudor	9/21/2010	WNV	RTPCR
Yolo	SAYO125011	5591	Culex pipiens	20	Woodland	9/28/2010	WNV	RTPCR
Yolo	SAYO146002	5595	Culex tarsalis	50	Davis	9/28/2010	WNV	RTPCR
Yolo	SAYO146002	5597	Culex tarsalis	1	Davis	9/28/2010	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled**	Virus	Band 01	Band 02	Band 03
Fresno	FRNO0004	Kerman	9/20/2010	WNV	1582	1586	
Fresno	FRWS5101	The Mendota Airport	9/21/2010	WNV	1612		
Imperial	COAV5001	Niland	9/20/2010	WNV	1329		
Imperial	COAV5001	Niland	9/7/2010	WNV	1346		
Kern	KERN0101	Lost Hills	9/20/2010	WNV	1757		
Kern	KERN0112	Wasco	9/20/2010	WNV	1786		
Kern	KERN0115	Bakersfield	9/20/2010	WNV	1875		
Kern	WEST6201	Maricopa	9/21/2010	WNV	3502	3505	
Madera	MADR4123	Chowchilla	9/20/2010	WNV	2113	2121	
Riverside	COAV0035	Mecca	9/20/2010	WNV	1339		
Sacramento	SAYO236001	Rancho Murieta	9/20/2010	WNV	2635		
San Joaquin	SJCM8004	Lodi	8/31/2010	WNV	3007		
Solano	SOLA0125	Cordelia	9/24/2010	WNV	3260		
Sutter	SUYA0014	Sutter	9/16/2010	WNV	3330		
Tulare	DLNO0021	Earlimart	9/16/2010	WNV	1490		
Tulare	DLTA6309	Reedley	9/20/2010	WNV	1540	1545	1547
Tulare	DLTA8530	Visalia	9/20/2010	WNV	1528		

**Date bled is equivalent to the probable date of seroconversion. The filter paper bleed date is reported as the date bled when whole blood is requested & tested for confirmation.

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NATIONAL COMMENTS

As of September 29, 2010, 547 human cases of WNV had been reported nationwide in 35 states: Alabama (3), Arizona (101), Arkansas (3), California (50), Colorado (38), Connecticut (7), Florida (7), Georgia (10), Idaho (1), Illinois (18), Indiana (5), Iowa (3), Kansas (6), Kentucky (1), Louisiana (18), Maryland (9), Massachusetts (3), Michigan (16), Minnesota (3), Mississippi (5), Missouri (4), Nebraska (36), Nevada (2), New Jersey (17), New Mexico (11), New York (89), North Dakota (8), Ohio (2), Pennsylvania (12), South Dakota (20), Tennessee (1), Texas (31), Virginia (2), Wisconsin (1), and Wyoming (4). Of the 547 cases, 321 (59%) had neuroinvasive disease. A total of 22 WNV-related fatalities have been reported in Arizona (7), California (1), Florida (2), Illinois (1), Michigan (1), Nebraska (1), New Jersey (2), New York (3), Texas (3), and Virginia (1).

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
