

February 3rd, 2009
Volume 3, Issue 1

Vector Borne Disease Bulletin



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A Note from the Editor:

Welcome to the first 2009 issue of the Vector-borne Disease Bulletin. The intent of this quarterly bulletin is to keep you better informed about the vector-borne disease investigations and surveillance conducted by the California Department of Public Health and collaborating state and local agencies in California. This first publication of the year is a summary of surveillance results for 2008. Look for the next quarterly bulletin at the beginning of May. In the meantime, please email me with any suggestions to make this bulletin more useful for your work and research and any pictures you have of surveillance activities. Thanks to everyone who contributed to this bulletin.

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Mosquito-borne Virus Surveillance

In 2008, West Nile Virus (WNV) was detected in 49 counties. A total of 438 human WNV cases were reported from 29 counties, for a statewide incidence of 1.2 cases per 100,000 people. Of the 438 cases, 289 (66%) were diagnosed with neuroinvasive disease and 15 fatalities were reported. The median age of all cases was 55 years (range: 3-94) and 276 (64%) were male.

Non-human WNV activity included the following: 32 equine WNV cases were reported from 14 counties and 17 died or were euthanized as a result of their infection. Forty-six counties reported 2,530 WNV positive dead birds; seven counties reported 32 WNV positive tree squirrels; 26 counties reported 2,002 WNV positive mosquito samples; 27 counties reported 584 WNV seroconversions among sentinel chickens.



Western equine encephalomyelitis virus and St. Louis encephalitis virus were not detected in 2008.

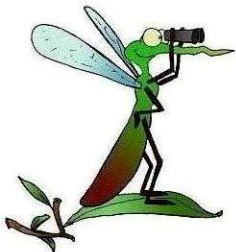


2008 & 2007 YTD West Nile Virus Comparisons*

	2007	2008
Positive Counties	51	49
Human Cases/Tested	380/1,326	438/1,289
Horse Cases/Tested	28/332	32/407
Total Dead Bird Reports	31,950	33,345
Positive Dead Birds/Tested	1,395/5,986	2,530/5,950
Positive Mosquito Pools/Tested	1,007/27,595	2,002/35,011
Positive Chicken Sera/Tested	510/28,874	584/29,541
Positive Squirrels/Tested	26/224	32/218



* As of February 2nd, 2009



A summary of West Nile virus activity from 2003-2008 can be found at:

www.westnile.ca.gov

Hantavirus Surveillance

Rodent surveillance for Sin Nombre virus (SNV) was conducted in 17 California counties in 2008. Of 358 deer mice (*Peromyscus maniculatus*) collected and tested, antibodies to SNV were detected in 41 (11.5%).

Results of testing for serum antibody to Sin Nombre virus in *Peromyscus maniculatus* reported in 2008.



County	No. Positive	No. Tested
Alameda	0	17
Calaveras	0	2
El Dorado	15	73
Lassen	1	7
Mono	12	55
Orange	1	17
Riverside	0	11
San Bernardino	0	35
San Diego	4	81
San Francisco	0	13
Shasta	1	7
Sierra	0	3
Siskiyou	2	14
Tuolumne	5	23

Plague Surveillance

A total of 1054 specimens from 39 counties were tested for plague antibody in 2008. Of these, 27 specimens from seven counties were seroreactive



Mammals testing positive for plague (*Yersinia pestis*), 2008

County	Location	Date	Host	No. pos	Results
Inyo	Millpond CoP and CG	10-Jul	CA Ground Squirrel	2	1:128; 1:256
Inyo	Taboose Creek CG	12-Jun	CA Ground Squirrel	7	1:32; 1:256; 1:256; 1:512; 1:512; 1:1024; 1:1024
Kern	Frazier Park, Cuddy Valley	10-Mar	Bobcat	1	1:128
Modoc	Lake City	5-Jan	Coyote	2	1:64; 1:128
Modoc	Lake City	11-Jan	Coyote	1	1:32
Modoc	Fort Bidwell	16-Jan	Coyote	1	1:128
Modoc	Cedarville	23-Jan	Coyote	1	1:32



Modoc	Cedarville	24-Apr	Coyote	2	1:64; 1:512
Modoc	Alturas	28-Apr	Coyote	1	1:128
Nevada	Tahoe NF, Sardine Lookout	4-Jun	Lodgepole Chipmunk	1	1:64
Nevada	Tahoe NF, Sardine Lookout	4-Jun	Shadow Chipmunk	1	1:64
Plumas	Vinton	24-Jan	Coyote	2	1:32; 1:64
Sierra	Beckwourth	15-Jan	Coyote	1	1:64
Sierra	Calpine	15-Jan	Coyote	1	1:64
Sierra	Sierraville	15-Jan	Coyote	1	1:32
Siskiyou	Callahan	1-Feb	Coyote	1	1:128
Siskiyou	Callahan	11-Feb	Coyote	1	1:64
Total No. Mammals Positive for Plague				27	



Tick-borne Disease Surveillance

Human disease surveillance

The California Department of Public Health reported 45 cases of Lyme disease and 10 cases of tick-borne relapsing fever between January and December, 2008. In addition, there was one case each of tularemia and transfusion-associated Babesia, both cases were from Alameda County. Local health departments will finalize 2008 case reports by May, 2009.





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www.calsurv.org

County	Location	No ticks tested	No. pools tested	No. pools positive			Lab
				DFA <i>Borrelia</i> spp.	PCR <i>Borrelia</i> spp.	<i>B. burgdorferi</i> **	
Alameda	Indian Joe Trail	25	25	0			CDPH-VBDS
	Little Yosemite Area	4	4	0			CDPH-VBDS
Amador	Grinding Rock SP	31	4		1		US Army
Calaveras	Natural Bridge	103	11		4	3	US Army
	Water Treatment Site	13	4		0		US Army
Contra Costa	Tilden Regional Park	115 (170*)	115 (170*)	1 (4*)			CDPH-VBDS
Lake	Mendocino NF	190 (2*)	19 (1*)		4		US Army
	Middletown	5 (3*)	5 (3*)	0			CDPH-VBDS
Los Angeles	Angeles NF	17	17	0			CDPH-VBDS
	Charmlee Wilderness	117	117	0			CDPH-VBDS
	Malibu	100	10		0		US Army
Madera	Chepo Saddle	2 (1*)	1 (1*)		0		US Army
Marin	Point Reyes NS	5	5	0			CDPH-VBDS
	Marin Headlands	67	67	3			CDPH-VBDS
Mariposa	Sierra NF	20	2		0		US Army
Nevada	Nevada City	17 (8*)	11 (2*)		0		US Army
Riverside	San Bernardino NF	26 (1*)	26 (1*)	0			US Army
San Bernardino	San Bernardino NF	6	2		0		US Army
San Diego	Cleveland NF	24	3		0		US Army
	Cleveland NF	23	23	0			CDPH-VBDS
San Joaquin	Carnegie SP	22	8		0		US Army
Santa Clara	Henry Coe SP	100 (11*)	10 (1*)		2 (1*)	2 (1*)	US Army
Shasta	Anderson River Park	38	4		0		US Army
	Baily Cove CG	18	2		0		US Army
	Anderson	51	5		0		US Army
	Redding	70	7		0		US Army
Stanislaus	Patterson	3	2		0		US Army
		1238					
Total ticks tested		(196*)	535 (179*)				
Total pools positive				4 (4*)	11 (1*)	5 (1*)	

* Nymphs

Test: DFA, Direct Fluorescent Antibody
PCR, Polymerase Chain Reaction

**PCR primer sets were specific for *B. burgdorferi*

CG, National Campground
NF, National Forest
SP, State Park

Laboratory: US Army, United States Army Center for Health Promotion and Preventive Medicine-West
CDPH-VBDS, California Department of Public Health, Vector-Borne Disease Section

If you have questions about the information contained in this report, please contact your CDPH VBDS Regional Biologist, or VBDS Headquarters at 916-552-9730.