

California Arbovirus Surveillance Bulletin # 19

Week 26 Friday, July 2, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

No human cases have been reported in 2010. At this time last year, an asymptomatic blood donor from Los Angeles County had tested positive for West Nile virus (WNV) infection.

Horses

No equine cases have been reported in 2010.

Dead Birds & Tree Squirrels

This week, 13 recently-infected* WNV positive dead birds were reported from 9 counties: Los Angeles (1), Madera (1), Merced (2), Placer (1), Sacramento (1), San Bernardino (1), Santa Clara (3), Santa Cruz (2), and Stanislaus (1). This is the first WNV positive bird reported from San Bernardino County, and the first detection of WNV activity in Placer and Santa Cruz counties this year. An additional 6 birds from 5 counties tested positive for chronic infection with WNV. No positive tree squirrels were reported this week.

In 2010, 40 recently-infected* WNV positive dead birds have been reported from 11 counties, and an additional 13 chronic WNV infections have been detected in birds from 8 counties (see www.westnile.ca.gov for more details). At this time last year, 88 birds from 15 counties and one tree squirrel 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 has begun 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

This week, 27 WNV positive mosquito pools were reported from the following 8 counties: Fresno (2), Kern (9), Madera (1), Riverside (1), Sacramento (8), Santa Clara (3), Sutter (1), and Tulare (2). This is the first detection of WNV activity in Fresno, Sutter, and Tulare counties this year. In 2010, 48 mosquito pools from 10 counties have tested positive for WNV. At this time last year, 97 WNV positive mosquito pools had been reported from 12 counties.

Sentinel Chickens

No seroconversions have been reported in 2010. At this time last year, 5 WNV positive chickens from 2 counties (Los Angeles and Yolo) had been reported.

| 2009 & 2010 YTD West Nile Virus Comparisons | | |
|---|------------|------------|
| | 2009 | 2010 |
| Total # Dead Bird Reports | 8,050 | 4,659 |
| # Positive Counties | 19 | 17 |
| # Human Cases | 0 | 0 |
| # Horse Cases | 0 | 0 |
| # Positive Dead Birds / # Tested | 88 / 1,311 | 40 / 887 |
| # Positive Mosquito Pools / # Tested | 97 / 9,635 | 48 / 9,752 |
| # Seroconversions / # Tested | 5 / 10,115 | 0 / 10,015 |
| # Positive Squirrels / # Tested | 1 / 50 | 1 / 38 |

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YTD WNV Activity by Element and County, 2010

| County | Humans | Horses | Dead Birds [^] | Mosquito Pools | Sentinel Chickens | Squirrels |
|----------------|----------|----------|-------------------------|----------------|-------------------|-----------|
| Butte | | | | | | 1 |
| Fresno | | | | 2 | | |
| Kern | | | | 11 | | |
| Los Angeles | | | 4 | | | |
| Madera | | | 3 | 4 | | |
| Merced | | | 3 | | | |
| Placer | | | 1 | | | |
| Orange | | | 1 | 2 | | |
| Riverside | | | | 13 | | |
| Sacramento | | | 2 | 8 | | |
| San Bernardino | | | 1 | 2 | | |
| San Diego | | | 1 | | | |
| Santa Clara | | | 19 | 3 | | |
| Santa Cruz | | | 2 | | | |
| Stanislaus | | | 3 | | | |
| Sutter | | | | 1 | | |
| Tulare | | | | 2 | | |
| Totals | 0 | 0 | 40 | 48 | 0 | 1 |

[^] Chronic infections are not included in county totals.

TEST SUMMARIES

Human & Horse Cases

| | | Number Tested | WNV | | WEE | | SLE | | Other | |
|----------------|------|---------------|----------|-------|----------|-------|----------|-------|----------|-------|
| | | | Imported | Local | Imported | Local | Imported | Local | Imported | Local |
| Humans Tested* | Week | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | YTD | 364 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horses Tested | Week | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | YTD | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Dead Birds & Tree Squirrels

| | | Number Tested | WNV Positive (recent only) |
|----------------|------|---------------|----------------------------|
| Dead Birds | Week | 90 | 13 |
| | YTD | 887 | 40 |
| Tree Squirrels | Week | 1 | 0 |
| | YTD | 38 | 1 |

Sentinel Chickens & Mosquito Pools

| | | Number Tested | WNV Positive | SLE Positive | WEE Positive |
|------------------------|------|---------------|--------------|--------------|--------------|
| Chicken Sera | Week | 719 | 0 | 0 | 0 |
| | YTD | 10,015 | 0 | 0 | 0 |
| Mosquito Pools: RT-PCR | Week | 1,552 | 24 | 0 | 0 |
| | YTD | 9,433 | 45 | 0 | 0 |
| Mosquito Pools: RAMP | Week | 212 | 3 | N/A | N/A |
| | YTD | 319 | 3 | N/A | N/A |

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POSITIVES

Dead Birds & Tree Squirrels

| County | Submitting Agency | City | Zip | Species | Reported | Virus | Type of Infection | Test Method |
|----------------|-----------------------|--------------|-------|---------------------------|-----------|-------|-------------------|-------------|
| Butte | Butte Co MVCD | Durham | 95938 | Yellow-billed Magpie | 6/16/2010 | WNV | Chronic | RT-PCR |
| El Dorado | El Dorado Co Env Mgmt | El Dorado | 95623 | Northern Mockingbird | 6/22/2010 | WNV | Chronic | RT-PCR |
| Los Angeles | Los Angeles Co Vet | Quartz Hill | 93536 | House Sparrow | 6/16/2010 | WNV | Recent | RT-PCR |
| Madera | Madera Co MVCD | Madera | 93636 | House Finch | 6/21/2010 | WNV | Recent | RT-PCR |
| Merced | Merced Co MAD | Merced | 95341 | Mourning Dove | 6/17/2010 | WNV | Chronic | RT-PCR |
| Merced | Merced Co MAD | Merced | 95340 | Western Scrub-Jay | 6/22/2010 | WNV | Chronic | RT-PCR |
| Merced | Merced Co MAD | Merced | 95340 | European Starling | 6/18/2010 | WNV | Recent | RT-PCR |
| Merced | Merced Co MAD | Merced | 95340 | American Crow | 6/22/2010 | WNV | Recent | RT-PCR |
| Placer | Placer MVCD | Rocklin | 95677 | Brewer's Blackbird | 6/21/2010 | WNV | Recent | RT-PCR |
| Sacramento | Sacramento-Yolo MVCD | Folsom | 95630 | Western Scrub-Jay | 6/22/2010 | WNV | Chronic | RT-PCR |
| Sacramento | Sacramento-Yolo MVCD | Sacramento | 95826 | American Crow | 6/17/2010 | WNV | Recent | RT-PCR |
| San Bernardino | San Bernardino VCP | Redlands | 92374 | Northern Mockingbird | 6/18/2010 | WNV | Recent | RT-PCR |
| Santa Clara | Santa Clara Co VCD | San Jose | 95129 | American Crow | 6/16/2010 | WNV | Recent | VecTest |
| Santa Clara | Santa Clara Co VCD | San Jose | 95117 | American Crow | 6/21/2010 | WNV | Recent | VecTest |
| Santa Clara | Santa Clara Co VCD | Cupertino | 95014 | American Crow | 6/23/2010 | WNV | Recent | VecTest |
| Santa Cruz | Santa Cruz MVCD | Mount Hermon | 95041 | Chestnut-Backed Chickadee | 6/21/2010 | WNV | Chronic | RT-PCR |
| Santa Cruz | Santa Cruz MVCD | Mount Hermon | 95041 | Chestnut-Backed Chickadee | 6/21/2010 | WNV | Recent | RT-PCR |
| Santa Cruz | Santa Cruz MVCD | Los Gatos | 95033 | Steller's Jay | 6/23/2010 | WNV | Recent | RT-PCR |
| Stanislaus | Turlock MAD | Ceres | 95307 | American Crow | 6/21/2010 | WNV | Recent | RT-PCR |

Mosquitoes

| County | Site Code | Pool # | # in Pool | Species | Collected | City | Virus | Test Method |
|------------|------------|--------|-----------|------------------------|-----------|--------------|-------|-------------|
| Fresno | CNSL1446 | 116 | 50 | Culex quinquefasciatus | 6/25/2010 | Clovis | WNV | RTPCR |
| Fresno | FRWS5110 | 47 | 50 | Culex tarsalis | 6/29/2010 | Tranquillity | WNV | RTPCR |
| Kern | KERN1005 | 327 | 39 | Culex quinquefasciatus | 6/22/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2002 | 407 | 50 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2002 | 409 | 50 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2002 | 410 | 50 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2010 | 405 | 50 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2010 | 406 | 34 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2020 | 401 | 50 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN2020 | 402 | 36 | Culex quinquefasciatus | 6/25/2010 | Bakersfield | WNV | RTPCR |
| Kern | KERN3009 | 379 | 50 | Culex tarsalis | 6/24/2010 | Bakersfield | WNV | RTPCR |
| Madera | MADR1007 | 40 | 17 | Culex quinquefasciatus | 6/22/2010 | Madera | WNV | RTPCR |
| Riverside | COAV13 | 2084 | 50 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RTPCR |
| Sacramento | SAYO213005 | 1631 | 20 | Culex pipiens | 6/29/2010 | Sacramento | WNV | RTPCR |
| Sacramento | SAYO223007 | 1639 | 28 | Culex pipiens | 6/29/2010 | Sacramento | WNV | RTPCR |
| Sacramento | SAYO233015 | 1640 | 16 | Culex tarsalis | 6/29/2010 | Sacramento | WNV | RTPCR |
| Sacramento | SAYO233018 | 1548 | 50 | Culex pipiens | 6/24/2010 | Sacramento | WNV | RTPCR |
| Sacramento | SAYO233018 | 1798 | 23 | Culex pipiens | 7/1/2010 | Sacramento | WNV | RTPCR |
| Sacramento | SAYO233030 | 1552 | 22 | Culex tarsalis | 6/24/2010 | Sacramento | WNV | RTPCR |

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|-------------|------------|-------|----|------------------------|-----------|------------|-----|-------|
| Sacramento | SAYO233033 | 1805 | 24 | Culex tarsalis | 7/1/2010 | Sacramento | WNV | RTPCR |
| Sacramento | SAYO234002 | 1633 | 16 | Culex tarsalis | 6/29/2010 | Elk Grove | WNV | RTPCR |
| Santa Clara | STCL1610 | 2990 | 9 | Culex pipiens | 6/29/2010 | San Jose | WNV | RAMP |
| Santa Clara | STCL1611 | 2998 | 8 | Culex pipiens | 6/29/2010 | San Jose | WNV | RAMP |
| Santa Clara | STCL2152 | 3000 | 12 | Culex pipiens | 6/30/2010 | San Jose | WNV | RAMP |
| Sutter | SUYA16 | 70 | 50 | Culex tarsalis | 6/29/2010 | Trowbridge | WNV | RTPCR |
| Tulare | DLTA8534 | 219 | 14 | Culex quinquefasciatus | 6/24/2010 | Visalia | WNV | RTPCR |
| Tulare | TLRE43 | 60001 | 16 | Culex tarsalis | 6/30/2010 | Tipton | WNV | RTPCR |

NATIONAL COMMENTS

As of June 29, 2010, three human WNV cases have been reported in Georgia (2) and Mississippi (1). Of these, two have been classified clinically as West Nile fever, and one as West Nile neuroinvasive disease; no fatalities have been reported. In addition, one asymptomatic blood donor has been reported in Texas.

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.

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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
