

California Arbovirus Surveillance Bulletin # 18

Week 25 Friday, June 25, 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

Three recently-infected* WNV positive dead birds were reported this week from Madera (1), Sacramento (1), and Santa Clara (1) counties; this is the first detection of WNV activity in Sacramento County this year. An additional 2 birds from Merced and San Bernardino counties tested positive for chronic infection with WNV. In 2010, 27 recently-infected* WNV positive dead birds have been reported from 8 counties, and an additional 7 chronic WNV infections have been detected in birds from Butte (2), Los Angeles (1), Merced (1), Sacramento (1), San Bernardino (1), and San Joaquin (1) counties.

A western gray squirrel from Butte County was reported positive for West Nile virus this week. This is the first WNV positive tree squirrel detected this year, and the first indication of WNV activity in Butte County in 2010.

At this time last year, 60 birds from 11 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

A total of 15 WNV positive mosquito pools were reported this week from Kern (2), Madera (2), Orange (2), and Riverside (9) counties. This is the first detection of WNV activity in Kern County this year. In 2010, 21 mosquito pools from 5 counties have tested positive for WNV. At this time last year, 81 WNV positive mosquito pools had been reported from 11 counties.

Sentinel Chickens

No seroconversions have been reported in 2010. At this time last year, 3 WNV positive chickens from Los Angeles County had been reported.

| 2009 & 2010 YTD West Nile Virus Comparisons | | |
|---|------------|------------|
| | 2009 | 2010 |
| Total # Dead Bird Reports | 7,284 | 4,254 |
| # Positive Counties | 15 | 12 |
| # Human Cases | 0 | 0 |
| # Horse Cases | 0 | 0 |
| # Positive Dead Birds / # Tested | 60 / 1,234 | 27 / 797 |
| # Positive Mosquito Pools / # Tested | 81 / 8,269 | 21 / 7,988 |
| # Seroconversions / # Tested | 3 / 9,249 | 0 / 9,296 |
| # Positive Squirrels / # Tested | 1 / 48 | 1 / 37 |

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YTD WNV Activity by Element and County, 2010

| County | Humans | Horses | Dead Birds [^] | Mosquito Pools | Sentinel Chickens | Squirrels |
|----------------|----------|----------|-------------------------|----------------|-------------------|-----------|
| Butte | | | | | | 1 |
| Kern | | | | 2 | | |
| Los Angeles | | | 3 | | | |
| Madera | | | 2 | 3 | | |
| Merced | | | 1 | | | |
| Orange | | | 1 | 2 | | |
| Riverside | | | | 12 | | |
| Sacramento | | | 1 | | | |
| San Bernardino | | | | 2 | | |
| San Diego | | | 1 | | | |
| Santa Clara | | | 16 | | | |
| Stanislaus | | | 2 | | | |
| Totals | 0 | 0 | 27 | 21 | 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 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | YTD | 344 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horses Tested | Week | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | YTD | 76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Dead Birds & Tree Squirrels

| | | Number Tested | WNV Positive (recent only) |
|----------------|------|---------------|----------------------------|
| Dead Birds | Week | 52 | 3 |
| | YTD | 797 | 27 |
| Tree Squirrels | Week | 4 | 1 |
| | YTD | 37 | 1 |

Sentinel Chickens & Mosquito Pools

| | | Number Tested | WNV Positive | SLE Positive | WEE Positive |
|------------------------|------|---------------|--------------|--------------|--------------|
| Chicken Sera | Week | 1,045 | 0 | 0 | 0 |
| | YTD | 9,296 | 0 | 0 | 0 |
| Mosquito Pools: RT-PCR | Week | 1,072 | 15 | 0 | 0 |
| | YTD | 7,881 | 21 | 0 | 0 |
| Mosquito Pools: RAMP | Week | 3 | 0 | N/A | N/A |
| | YTD | 107 | 0 | 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 County MVCD | Paradise | 95969 | Western Gray Squirrel | 6/14/2010 | WNV | Recent | RT-PCR |
| Madera | Madera Co MVCD | Madera | 93636 | Western Scrub-Jay | 6/14/2010 | WNV | Recent | RT-PCR |
| Merced | Merced Co MAD | Atwater | 95301 | Western Scrub-Jay | 6/14/2010 | WNV | Chronic | RT-PCR |
| Sacramento | Sacramento-Yolo MVCD | Sacramento | 95826 | American Crow | 6/15/2010 | WNV | Recent | RT-PCR |
| San Bernardino | San Bernardino VCP | Hesperia | 92345 | House Sparrow | 6/11/2010 | WNV | Chronic | RT-PCR |
| Santa Clara | Santa Clara Co VCD | Sunnyvale | 94087 | American Crow | 6/15/2010 | WNV | Recent | VecTest |

Mosquitoes

| County | Site Code | Pool # | # in Pool | Species | Collected | City | Virus | Test Method |
|-----------|-----------|--------|-----------|------------------------|-----------|-------------|-------|-------------|
| Kern | KERN1005 | 280 | 50 | Culex quinquefasciatus | 6/15/2010 | Bakersfield | WNV | RT-PCR |
| Kern | KERN2018 | 296 | 50 | Culex quinquefasciatus | 6/16/2010 | Bakersfield | WNV | RT-PCR |
| Madera | MADR1007 | 36 | 27 | Culex tarsalis | 6/18/2010 | Madera | WNV | RT-PCR |
| Madera | MADR1007 | 37 | 30 | Culex quinquefasciatus | 6/15/2010 | Madera | WNV | RT-PCR |
| Orange | ORCO33 | 845 | 50 | Culex quinquefasciatus | 6/17/2010 | Westminster | WNV | RT-PCR |
| Orange | ORCO33 | 846 | 50 | Culex quinquefasciatus | 6/17/2010 | Westminster | WNV | RT-PCR |
| Riverside | COAV30 | 1952 | 50 | Culex tarsalis | 6/14/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV540 | 2016 | 50 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV34 | 2019 | 50 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV35 | 2022 | 50 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV123 | 2050 | 5 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV45 | 2057 | 29 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV58 | 2059 | 50 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV58 | 2060 | 44 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |
| Riverside | COAV46 | 2062 | 9 | Culex tarsalis | 6/22/2010 | Mecca | WNV | RT-PCR |

NATIONAL COMMENTS

As of June 15, 2010, one human case of West Nile neuroinvasive disease has been reported in Mississippi.

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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.

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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
