

The West Nile Weekly

SUMMARY: Seven to eighteen counties are expected to report human cases in the week of August 8th - 14th. By the end of the week, we should be halfway through the WNV season. Vector counts are low, but this is not a good thing - mosquito infection rates are higher than usual.

How are the mosquitoes?

There is some slightly good news in Figure 1. The data we had available last week implied that mosquitoes in SD in 2016 were more heavily infected than we had ever before seen. However, we use a model that produces conservative estimates of mosquito infection rates (blue) when only early data are available. This week, updated mosquito testing data (red) settled down towards expected.

We caution again that observed mosquito infection rates will be revised as more reports come in; specifically, the dip in this last week may not persist, just like the spike in the previous edition did not persist.

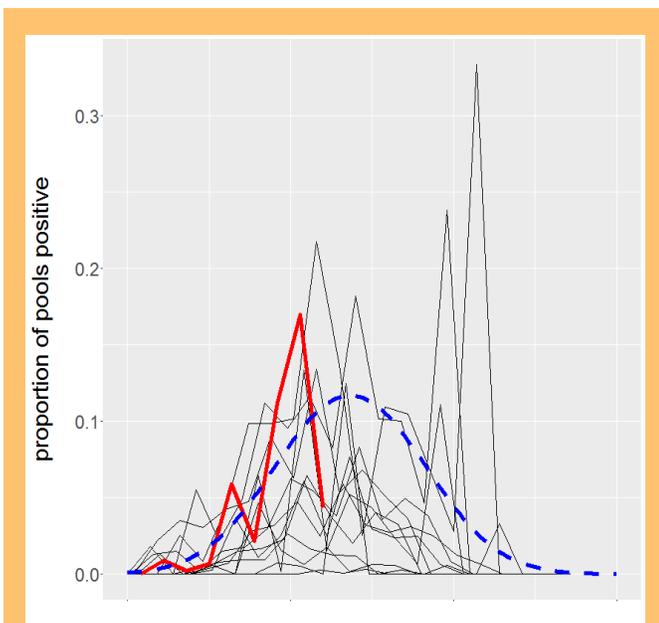


Figure 1: Observed (red) and estimated (blue) positive pool rate for 2016 and other years (black), based on all data available Aug. 1st.

We still have reason to believe that 2016 is in the top five years for mosquito infection rates since 2003. With 1523 vector pools tested, 4.5% (68) have been positive; this was 2.6% last week. The cumulative MIR is 2.1 positive vectors per 1000 tested in 2016; this was 1.4 last week. We count 28 positives for Brookings County, 22 for Brown, 8 for Minnehaha, 2 each for Davison, Hughes, and Lake, and 1 each for Beadle, Codington, Edmunds, and Meade.

Culex tarsalis numbers have continued their decline from last week, while *Aedes vexans* have had a slight recovery. Vector counts are low compared to the average year and numbers are comparable to what was observed this week in 2012 (Figure 2).

However, it is not comforting that vector numbers are low, especially while infection rates are so high. Waiting for large counts to begin larviciding and spraying would be a mistake in this year.

What to expect?

Estimated statewide risk has risen to 17.6% of all counties in the week of August 8th - 14th, so that seven to eighteen counties are expected to report cases this week. Brown has an estimated 68.6% probability, or 2 in 3 chance, of reporting a case (Figure 3). The highest estimated per-person risk remains in McPherson, Edmunds, Spink, Day, and Marshall, each of which is estimated to have 7 new cases per 100,000 citizens in this week (Figure 4).

Historically, 16% of cases occur in the week of August 8th - 14th. Of all cases, 49% tend to occur before August 14th; i.e. by the end of this week, we will probably be 1/2 through 2016's WNV season.

We estimate that there will have been at least 56 cases in SD in 2016 by the end of this week. We had previously estimated that there would be more than 103 cases in 2016; due to the recent warmer temperatures we now estimate that there will be at least 116.

Numerous events will keep citizens outdoors after dark; e.g. the [Sioux Empire Fair](#). The [Sturgis Motorcycle Rally](#) is especially notable, since thousands of bikers will be exposed to the environment on machines that emit CO₂, one of the most powerful lures of host-seeking vectors. Sturgis [has been](#) and continues to be aware of the threat. Local media (e.g. [Rapid City](#)) are advising citizens of the risk this year.

What's going on elsewhere?

Ten citizens from [Dallas, TX](#) had been diagnosed as of July 27th. [CA](#) also reports the proportion of positive pools, and this was 5.1% as of July 22nd; i.e. mosquito infection rates are comparable in SD and CA. Dead bird reports in CA are nearly 60% higher than the 5 year year-to-date average. Officials there are [warning](#) that this is going to be a big WNV year.

A community in Iowa has decided that individuals will not be able to [opt out](#) of mosquito spraying. Des Moines only sprays when mosquito counts are high; we do not recommend this common practice.

We are beginning to see reports of unvaccinated horses contracting and dying from WNV; e.g. in [CA](#), [NE](#), [NV](#), and [WA](#). Equine WNV is fatal in nearly 1/3 of cases and [SD is a "horsey" area](#), especially with its reservation horses, so we note that 2016 is risky not just for human populations in SD.

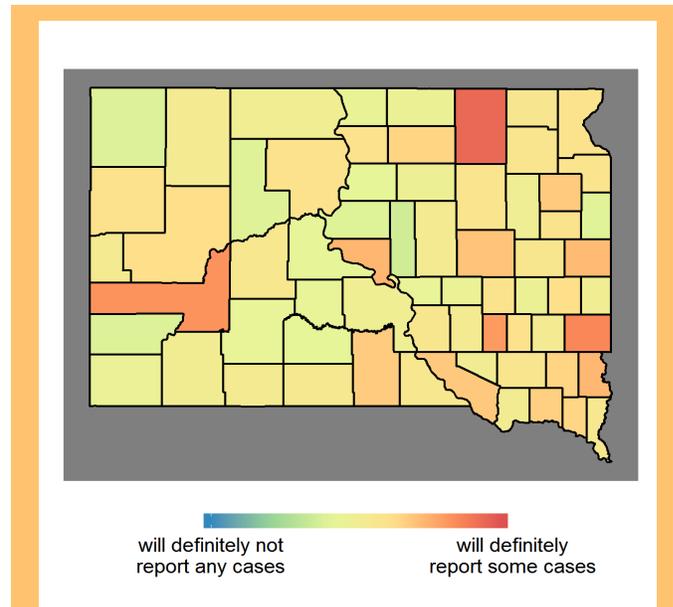


Figure 3: Estimated per-county risk for the week of August 8th. Brown County has a 2 in 3 chance of reporting at least one case.

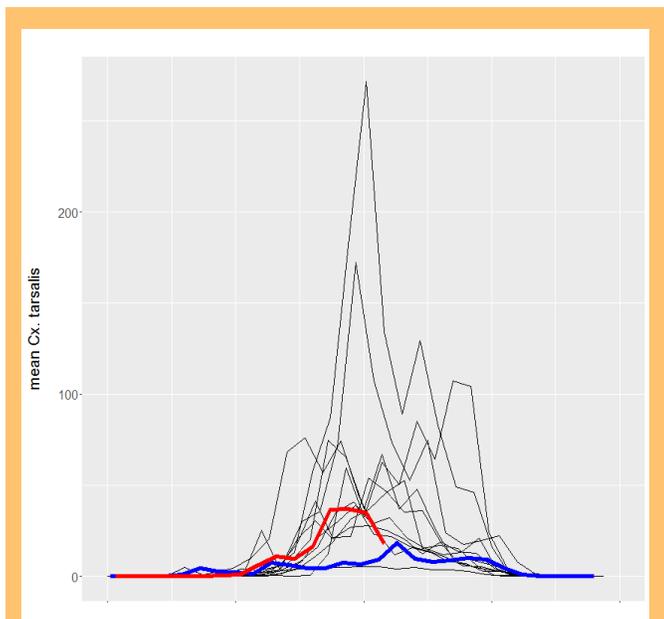


Figure 2: Average *Culex tarsalis* counts by week, statewide, for 2016 (red), 2012 (blue), and all other years (black).

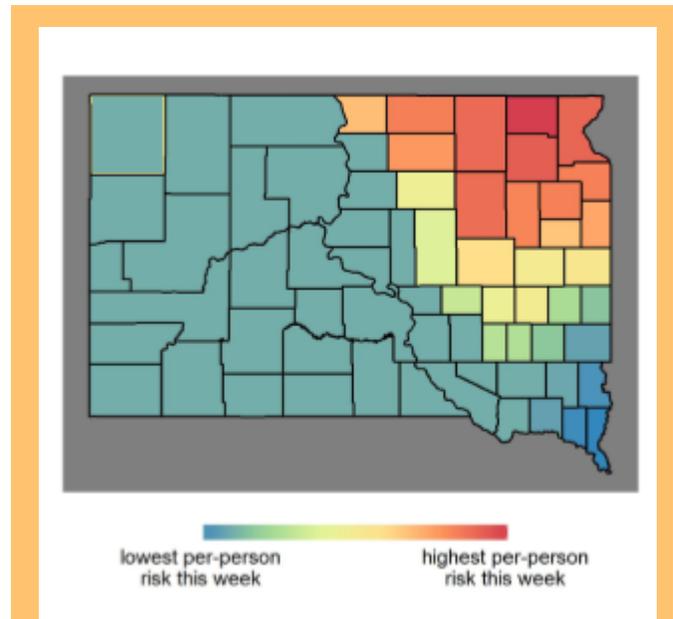


Figure 4: Estimated per-person risk for the week of August 8th, mostly concentrated in the Prairie Pothole Region.