

The West Nile Weekly

SUMMARY: Seven to eighteen counties are expected to report human cases in the week of August 15th - 21st. By the end of the week, we should be 2/3 through the WNV season. This is the beginning of the home stretch, but 1/3 of cases are still waiting and control measures are still recommended.

How's the weather?

While there have been some stretches of high heat and lots of records broken, the sustained high temperatures predicted by some weather experts have not materialized in SD. Even during the dog days of Summer 2016 there have been remarkably cool periods, and the 30-day average puts most of the state around just 1°F above normal.

How are the mosquitoes?

There has been a slight recovery in *Culex tarsalis* numbers, but collections are still low to average. Numbers should be stable over the next few weeks, and then the downturn will begin to end the season. *Aedes vexans* numbers are declining; average collections fell by nearly 50% between this and last week. In a few weeks this nuisance mosquito will be reduced to a minor nuisance, until it has a slight resurgence towards the end of the year.

Last week, it appeared that mosquito infections were crashing, but we were skeptical. This week, we received updated testing data that clarified the situation: there was a minor decrease, but no collapse. Early data this week again make it seem as though there has again been a crash in infection rates, but we are again skeptical (Figure 1).

This would be fantastic news - if it occurs we will gladly revise our estimates of risk - but for the moment we predict that around 1 out of every 10 vector pools tested will be positive after all the data have been collected and reported. In other words, 2016 is still one of the highest years on record for WNV in the vector.

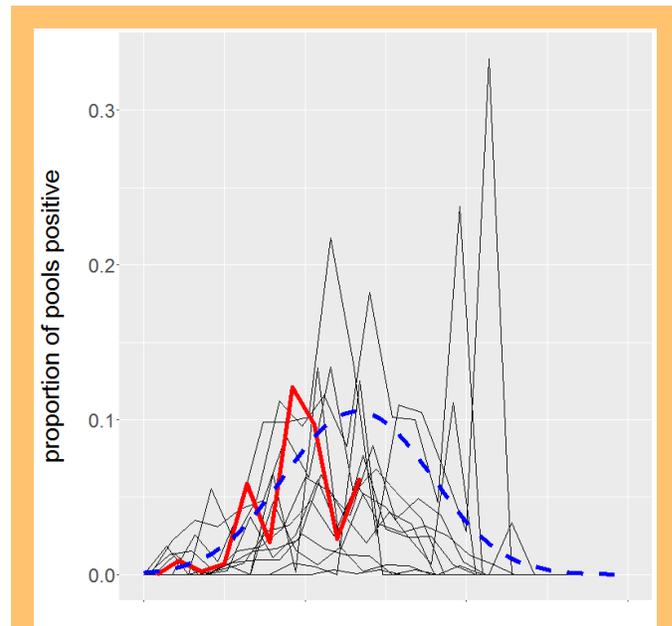


Figure 1: Observed (red) and estimated (blue) positive pool rate for 2016 and other years (black), based on all data available Aug. 8th.

What to expect?

Estimated statewide risk has finally reached its peak - our predictions for the week of August 15th - 21st are almost exactly what we predicted last week. This week and the previous represent the height of the human WNV season, after which cases will begin to subside. Last week we estimated that 17.6% of all counties would report cases; for the week of August 15th - 21st, we've fallen just slightly to 17.4%.

We again expect that there will be seven to eighteen counties reporting cases. Brown has an estimated 67.5% probability, or 2 in 3 chance, of reporting a case (Figure 2). 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 3).

Historically, 14% of cases occur in the week of August 15th - 21st. Of all cases, 63% tend to occur before August 21st. By the end of this week, we will probably be 2/3 through 2016's WNV season.

We estimate that there will have been at least 66 cases in SD in 2016 by the end of this week. We had previously estimated that there would be at least 116 cases in SD in 2016, which was more than usual due predicted warmer temperatures. This week our estimate is 114 minimum cases. There have been no surprising new data, so our estimates have remained stable.

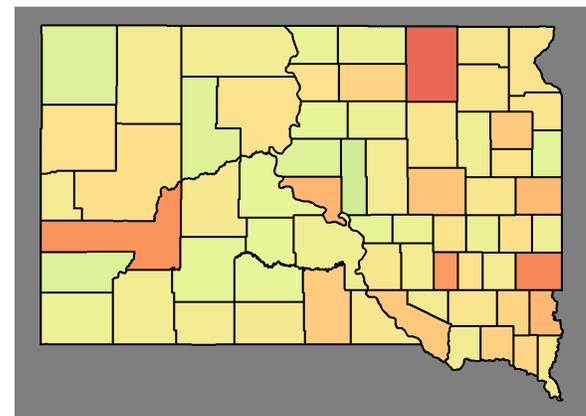
Because this week is essentially the same as last week in terms of human risk, we recommend the same: larviciding and adulticiding now (even if no complaints are received about nuisance mosquitoes), continued surveillance and reporting, and reasonable care around any events that may expose the public to the vector; e.g. [the Wildcat Classic](#), [Yankton Riverboat Days and Arts Festival](#), [the Leading Ladies Marathon](#).

What's going on elsewhere?

The [CDC WNV report](#) has been updated for early August, and 36 states have reported human infections, for a total of 89 cases and no deaths. [CA](#) still has nearly twice the number of positive mosquito pools compared to the 5 year average, and 50% more dead birds and positive sentinel chickens. One [death](#) has been reported there. Experts in [CO](#) are reporting their highest ever mosquito infection indices.

A paper came out recently describing the case of an immunosuppressed 10-year-old boy who received an [infected kidney](#) and was hospitalized for WNV infection. Even during acute infection the child tested negative for WNV using two different techniques. The organ donor had not been screened for WNV before donation, and it was only after the boy became sick that she was tested and diagnosed. Four years later, the boy shows signs of minor neurological deficits, but is otherwise normal.

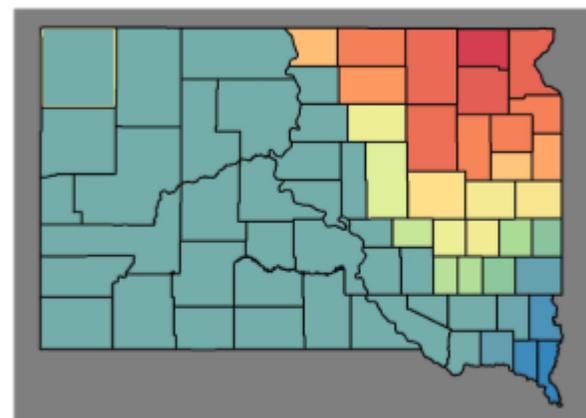
Although we here in SD are concerned primarily with WNV, we can not help but mentioning the unprecedented warning by the CDC that pregnant women



will definitely not report any cases

will definitely report some cases

Figure 2: Estimated per-county risk for the week of August 15th. Brown County has a 2 in 3 chance of reporting at least one case.



lowest per-person risk this week

highest per-person risk this week

Figure 3: Estimated per-person risk for the week of August 15th, mostly concentrated in the Prairie Pothole Region.

should simply avoid traveling to an area in [FL](#) due to local transmission of the Zika virus by the *Aedes aegypti* mosquito. As we note [elsewhere](#), there is no need for immediate alarm for mosquito-borne Zika in South Dakota, but this is a disturbing development for the mosquito control and public health communities, and something that we will be expected to know and talk about.