

The West Nile Weekly

SUMMARY: Seven to seventeen counties are expected to report human cases in the week of August 22nd - 28th. By the end of the week, we should be 3/4 through the WNV season. Risk is beginning to fall, but ever so slowly. Citizens should be encouraged to take reasonable precautions when outdoors.

How's the weather?

While average temperatures usually begin falling at this point in the year, the state continues to set new record high daily temperatures. There was a month-long stretch in which temperatures were closer to average (and occasionally even lower, when thunderstorms came through the state), but it appears the end of the summer may be as warm as the beginning.

How are the mosquitoes?

On August 15th, there have been 118 positive vector pools and 45,736 mosquitoes tested since the beginning of the year, so that the MIR is estimated to be 2.6 positive mosquitoes per 1,000 tested. This still places us in one of the highest years on record for mosquito infection rates.

Brookings County has had 45 positive pools out of 461; i.e. nearly 1 out of every 10 pools tested has been positive for the virus. Most other counties reporting data are positive around 3-5%. Just a few reporting counties report no positive pools; for example, all of [Harding](#)'s 64 pools have tested negative.

Culex tarsalis numbers have recovered after a slight dip (Figure 1). We believe that the slightly colder temperatures in the previous weeks may have temporarily depressed the species, but vectors currently sit near average for this point in the year. *Aedes vexans* are in the middle of a collapse, having again fallen by nearly half from the previous week.

What to expect?

Last week we estimated that 17.4% of all counties

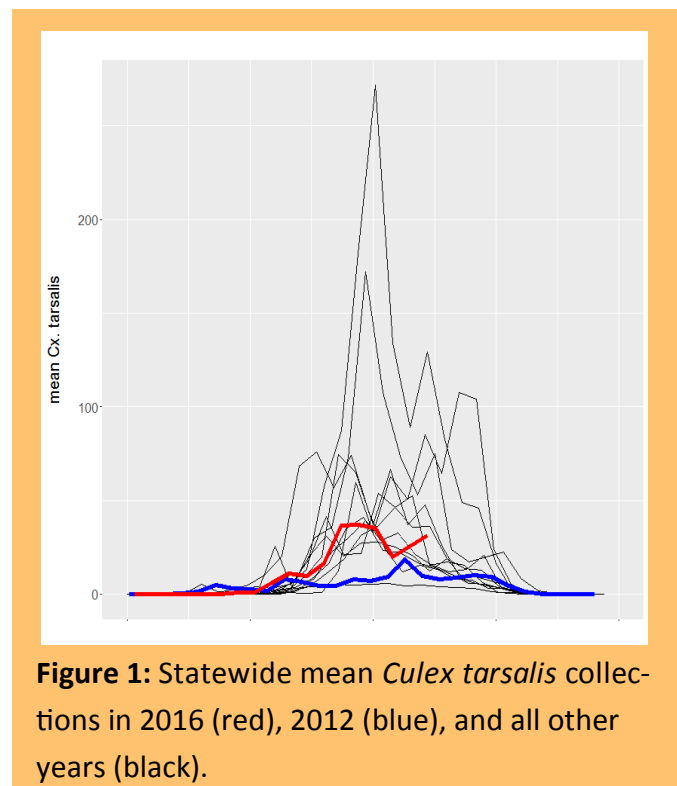


Figure 1: Statewide mean *Culex tarsalis* collections in 2016 (red), 2012 (blue), and all other years (black).

would report cases; for the week of August 22nd - 28th, we've fallen just slightly to 16.8%, and expect 7 to 17 counties to report cases. Brown has an estimated 68.1% probability, still a 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 estimated to have 6.5 new cases per 100,000 citizens in this week (Figure 3).

Historically, 12% of cases occur in the week of August 22nd - 28th. Of all cases, 75% tend to occur before August 28th. By Aug. 28th we will probably be 3/4 through 2016's WNV season. We estimate that there will have been at least 77 cases in SD in 2016

by the end of this week. Our estimate of 114 cases minimum for 2016 has not changed.

While the season is beginning to wrap up, it will do so slowly. The falling temperatures will be pleasant and will draw citizens outdoors, but our days will still be warm enough to support both vector and virus, so the risk of infection is still real. Even by August 28th, a quarter of cases will have yet to show symptoms.

Combined with the drop in nuisance mosquitoes, it is a real possibility that our citizens will underestimate and expose themselves to risk. We continue to encourage mosquito control and campaigns of public awareness where possible.

We advise those training for and participating in upcoming events like the [Lean Horse 100](#) to be mindful of the potential risk. Although WNV is not typically dangerous, [this level of athletic exertion can suppress the immune system](#) and may give the virus a head start. (This is why we do not run.)

What's going on elsewhere?

The USGS and CDC have put out [preliminary maps for 2016](#). These maps are incomplete and will lag weeks behind email reports from the SD Department of Health, but may be useful for exploring the national distribution of the disease. Personal stories of infection are showing up more frequently ([AL](#)).

WNV in [CA](#) is still 50-100% more active than the 5 year average, depending on how it is measured. Doctors in [CO](#) and [TX](#) warn that focusing on Zika to the exclusion of WNV is a mistake. [CO](#) is seeing fewer vectors than last year but their infection rate is higher.

There is a debate in [CO](#), illustrating the difficult politics of mosquito control. Fort Collins, the seat of the Larimer County, CO, does not spray until two human cases are confirmed in a week; we note that this may be too late, as symptoms may only appear weeks after infection. Nearby Loveland bases spray decisions on the number of mosquitoes collected (nuisance spraying) regardless of infection statistics. The county, however, sprays if a certain number of infected mosquitoes are collected.

A study published recently claims that [cardinals in GA may protect humans from WNV infections](#), be-

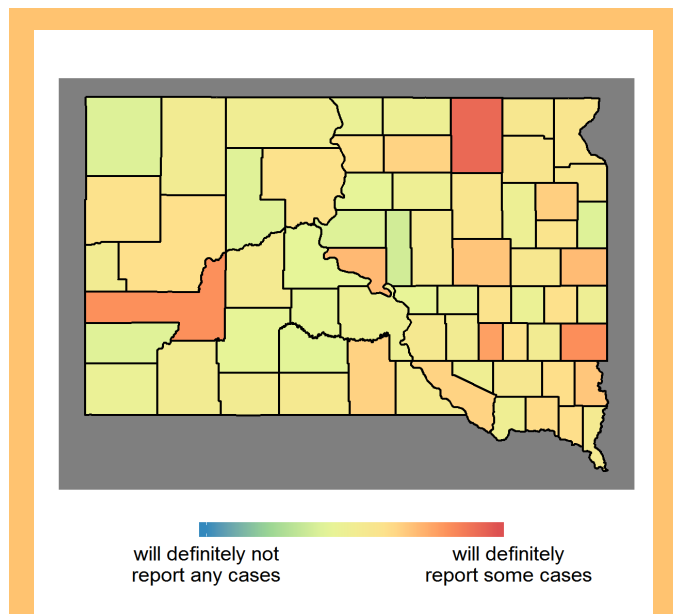


Figure 2: Estimated per-county risk for the week of August 22nd. Brown County has a 2 in 3 chance of reporting at least one case.

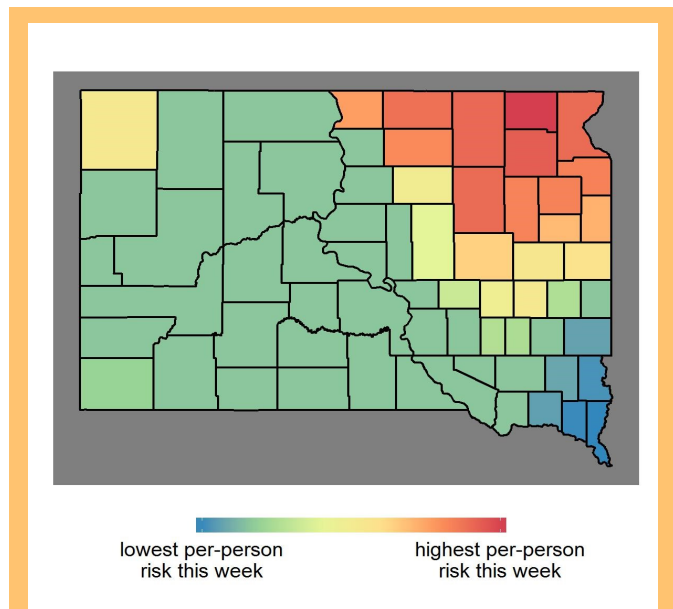


Figure 3: Estimated per-person risk for the week of August 22nd, still mostly concentrated in the Prairie Pothole Region.

cause birds of the species can become infected but do not tend to pass the virus back to mosquitoes. While this species doesn't appear often in [SD](#), we do have similar birds. The WNV cycle is complicated - not all birds increase risk to humans, and some may lessen it.

