

It's Getting Hot Out There

Converting corn fields to solar or server farms would only make it worse

David I Gustafson, Ph.D., St. Louis, MO

July 30, 2025

If you live here in the Midwest, I don't have to tell you that it's getting hot and steamy out there. Perhaps not as bad as 2012 or other more distant hot years, but plenty uncomfortable. And just as during last summer, there is now a steady stream of media stories trying to pin the blame on 'corn sweat,' including a [biased TV story](#) that aired this past week on our local CBS affiliate, KMOV.

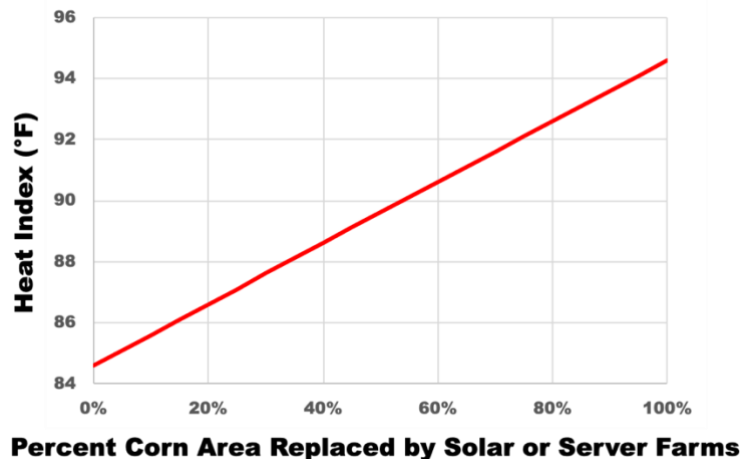
This is yet another in a series of 'anti-corn messages' that seem to pepper the national conversation. Within the past couple of weeks, Coca Cola succumbed to the sentiment by [proclaiming](#) their US-based product would be switching to cane sugar – rather than using the very same sugary molecules that are more economically produced by corn.

It is against this backdrop that [some activists are pushing to replace corn](#) and other productive crops with massive solar arrays and/or [water-hungry data centers](#). This concept is attracting some policy support in the [state of Illinois](#), a state blessed with some of the [most productive farm ground](#) on the planet.

As a long-time student of the environmental realities of climate change, I fully acknowledge the very real challenges to sustainably meet future energy demand and the urgent calls to decarbonize the world economy (however futile and ineffective they may be: see my [Sisyphus blog](#)). However, I would assert that the challenges to feed and clothe the hopefully wealthier population of 10 billion people by mid-century are just as great as those to supply energy, and arguably of greater moral importance than fueling on-demand video services and AI.

US-grown corn and other crops help meet food/fiber/fuel needs with unmatched efficiency and productivity, while also anchoring the [livelihoods of thousands of rural communities](#). In addition, contrary to the bogus claims of 'corn sweat' advocates, the crop actually provides the ecosystem service of bringing greater comfort to Midwesterners through the massive cooling effect of evapotranspiration, as explained in two of my earlier blogs ([6-Sep-2024](#) and [30-Sep-2024](#)).

To date, this hugely beneficial cooling effect of having corn on the landscape has been completely ignored by others, certainly including those advocating for corn to be replaced by solar arrays and/or data centers. Accordingly, their incomplete assessments fail to consider the extremely negative consequences of eroding the cooling benefit (see chart at right), which would occur in direct



proportion to the amount of corn removed from the landscape. This particular example is taken from the modeling scenario that I previously reported, which refers to a nominal air temperature of 90°F and a relative humidity of 50%, with corn actively transpiring at a very high rate of 10,000 gallons/acre/day.

The example clearly shows the unwelcome warming that would result from corn being displaced by solar and server farms. There are numerous other ecosystem services provided by US crops, such as carbon sequestration and natural habitat provided by a diverse landscape composed of crops, riparian buffers, etc. Given the essential human needs that are met by agriculture, and the critical role US crops play in sustaining rural economies as well as helping to balance the nation's trade deficit – it seems profoundly foolhardy to replace one of our nation's most productive crops with solar or server farms.

I respectfully suggest that solar arrays and data centers focus on other lands, such as abandoned or poverty-stricken urban areas, which typically have much more convenient access to the necessary infrastructure (power grid, water, etc.). As noted in my [previous blog](#), STL North City is one such urban area where plentiful land is available.

Of course, the process of placing solar and server farms on the landscape (whether rural, urban, or peri-urban) needs to be fully transparent and completely inclusive, including all community members and others who are likely to be impacted. I believe that placing such facilities in urban centers, where proximity to users of the energy is maximized, clearly makes the most sense. But I also fully acknowledge that the immediately adjacent neighbors will be most impacted, and that their voices should be given the greatest weight in the debate.

We obviously need renewables, just as there is increasing demand for more computing capacity. However, let's avoid converting productive farmland at a time when our collective need for affordable food has never been greater. It is an urgent need that is certain to continue rising.