**Carbon in Grasslands**

Our house in Iowa City is surrounded by prairie flowers and grasses, instead of flowers and shrubs that are smaller and lower. The prairie flowers and grasses grow tall, but the bulk of these plants is in their deep roots. And unlike most flowers, including perennials, the roots of these prairie flowers and grass store vast amounts of carbon.

How do prairie flowers and grasses compare to forests for sequestering carbon? Forests have been storing “about a quarter of the carbon dioxide pollution produced by humans worldwide. But decades of fire suppression, warming temperatures and drought have increased wildfire risks” and changed forests in California “from carbon sinks to carbon sources.”

A recent study conducted by the University of California at Davis has verified that in California “grasslands and rangelands are more resilient carbon sinks than forests.” We might infer from the study, published in the journal *Environmental Research Letters*, that replanting prairie grasses around the globe should be given priority over planting trees. Especially in semi-arid environments that exist on forty percent of the earth’s surface.

“Looking ahead,” the study concludes, “our model simulations show that grasslands store more carbon than forests because they are impacted less by droughts and wildfires.”

“Unlike forests, grasslands sequester most of their carbon underground, while forests store it mostly in woody biomass and leaves. When wildfires cause trees to go up in flames, the burned carbon they formerly stored is released back to the atmosphere. When fire burns grasslands, however, the carbon fixed underground tends to stay in the roots and soil, making them more adaptive to climate change.”

Given the increasing heat, drought, and numerous forest fires occurring in many places on earth, the study concludes that grasslands are “the only viable net carbon dioxide sink through 2101." For "grasslands continue to store some carbon even during extreme drought simulations.”\*

Finally, researchers from universities in Illinois, Michigan, Nebraska, Minnesota, Washington, and Wyoming as well as Australia have confirmed that grasslands with more “diverse plant species have more carbon storage capacity than less-diverse grasslands, largely because the former produce more biomass.”\*\*

Iowa City is cultivating prairie glass in public parks as well as along the Iowa River, train tracks, and highways. Opportunities to promote grasslands exist in most communities.

**Might suggesting this new strategy to your city or county officials be an eco-choice for you? Might you add prairie grasses and flowers to the land around your home?**

\*[https://climatechange.ucdavis.edu/climate/news/grasslands-more-reliable-carbon-sink-than-trees#](https://climatechange.ucdavis.edu/climate/news/grasslands-more-reliable-carbon-sink-than-trees).

\*\*<https://www.uwyo.edu/uw/news/2017/04/uw-researcher-helps-quantify-grasslands-carbon-storage-value.html>.

The photo of our yard shows three species of grass and two species of flowers.