



Green Lands
Blue Waters

Voices From Our Network

The Civic Scientists

The next generation of continuous living cover (CLC) researchers reflect on the current moment in history and reimagine the future.

The Solution That Grows on Trees

Benjamin Bishop
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This year has brought with it unexpected events that have challenged us and highlighted deeply-rooted issues facing almost every facet of society. Between record-breaking temperatures, massive protests and a pandemic, Americans are learning that life may not return to business as usual. As an eternal optimist, I can't help but believe that we will use this unique inflection point in human history to enact change long overdue. Thanks to the constant digital connectedness enjoyed today, we can share ideas and make informed decisions faster than ever. So, while the task at hand can seem insurmountable at times, I am constantly inspired by the people innovating solutions that are having real impact.

Several years ago I became interested in pursuing research. Seeing that agriculture is foundational to economic, social and environmental issues, it seemed like an appropriate area to channel my deep interest in food plants and regenerative design. At this point, I had experience with agriculture on an urban and community scale. However, I wanted to learn how commercial agricultural operations could be improved to

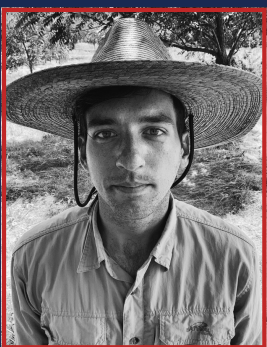
be less harmful to the environment, and possibly even beneficial. As I travelled to study farms that were actually building soil, improving biodiversity and feeding their communities while making a profit, I began to realize that the idea wasn't just a 1960's pipedream. This could actually scale. Soon after, I began to see the connection between regenerative agricultural practices and climate change mitigation through the process of carbon sequestration. A particularly grim IPCC climate report was the spark that I needed to dedicate my life to the implementation of solutions that address concerns of conventional agriculture.

Agroforestry, the integration of trees on cropland or with livestock, is a set of practices that has tremendous potential as

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one of these solutions. My current research at the University of Missouri involves the genetic improvement of tree crops such as black walnut so that they may be more widely planted across the midwestern United States as a profitable crop for farmers. If implemented properly, agroforestry can make land more productive than if it were planted to monocrop or livestock alone. Moreover, this shift will be beneficial for farmers by diversifying their income streams with the addition of tree crops and timber sales once the trees reach maturity. By perennializing the agricultural landscape with tree crops, perennial vegetables/fruits and even perennial grains that are currently under development, I hope to see a more resilient and regenerative way of farming in my lifetime. Regenerative methods of farming, however, will not be adopted readily without a cultural shift in the way farms are managed and a resurgence of young people from all backgrounds wanting to begin careers as farmers. Since agroforestry operations tend

to have different business models than conventional farms, they are less likely to compete directly, allowing new entrants into the industry that would otherwise be barred. I think this is a crucial point that will create more equitable access to land and spur local economies throughout the region. In these beginning stages, I hope there will be more Extension support and monetary incentivization of regenerative farming practices until communities begin to establish and become self-sufficient. Demonstration farms and public outreach may also improve awareness and acceptance. We are living in unprecedented times and I would assert that there has never been a more uncertain future. I hope we can use this rare opportunity to shape the future to a more just and resilient one through the decisions made in the present. By focusing on agriculture, we can address economic, social and environmental issues in tandem while continuing to provide for a nation in need now more than ever.



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*Benjamin Bishop is a graduate research assistant at the University of Missouri studying agroforestry systems and tree crops. He has had a lifelong fascination with fruits, vegetables, nuts and seeds and is currently working with black walnut (*Juglans nigra*) at the Horticulture and Agroforestry Research Center in New Franklin Missouri. Through his research, he hopes to expand the utilization of trees and woody shrubs as both profitable crops and as a strategy to off-set greenhouse gas emissions.*