

Daniel Block

Stewarding Sustainable Relationships Between Rural Midwestern Communities and the Soil in the Era of Climate Change

Sheldon, Illinois, United States of America | The Unceded Homelands of the Kiikaapoi, Peoria, Kaskaskia, Bodéwadmiakiwen, Myaamia, and Očhéthi Sakówiŋ Peoples

Nominated by Brandeis University

Associated project website: zumwaltacres.org

Associated project instagram: [@ zumwaltacres](https://www.instagram.com/zumwaltacres)

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Summary

Funding for this project allowed for the successful planting and management of a new one acre perennial demonstration plot at Zumwalt Acres (ZA). Additionally, field days funded by the grant further established Zumwalt Acres as a hub of knowledge sharing in an agricultural community grappling with the realities of climate catastrophe.

Project Description

- How did you decide what issue(s) you wanted to address and what approach(es) or strategies you chose to implement in your project?
 - The issues of soil preservation and rural community building are important issues to address because of the crucial role that American farmers, especially in the Midwest and Great Plains, can play in reversing climate change. Deep tillage, lack of cover crops, and abysmal adoption of conservation practices across these regions has increased the rate of erosion over the past hundred years by a factor of 1,000 times higher the background rate of erosion (Quarrier et al, 2022). These high rates of erosion release soil carbon into the atmosphere, weaken the soil's ability to store carbon, and erase soil biodiversity. Still, proper soil management can provide farmers, and the planet, with a vital source of long term carbon storage while enhancing soil fertility. Should farmers implement innovative soil restoration and conservation strategies, especially agroforestry, enhanced rock weathering, perennial staple cropping, and/or sustainably sourced biochar, they could reap the benefits of a currently lucrative and unregulated carbon market while decreasing overall rates of erosion and increasing end of year profits (Thompson et al, 2021).
- Why did you choose your host site? In what ways did local relationships support you or contribute to the project?
 - Zumwalt Acres is a regenerative agricultural research community in rural Illinois, establishing a model of land stewardship that is ecologically sustainable, socially just, and rooted in Jewish values. ZA conducts cutting edge carbon capture and sequestration research with Yale University and the University of Illinois Urbana-Champaign.
 - I chose Zumwalt Acres as my host site because I was a summer apprentice in 2022 and knew that I would be returning for another season in 2023. My experience in the summer of 2022 strengthened this project through my relationship with the land, local community members, and my mentors at ZA.
 - Because I was already familiar with the climate and soil at ZA, I was able to determine before receiving funding what perennials to buy and where on the land they should go. My ability to create a holistic crop plan that considers native species and cultivars that will survive long term climate variability was, and will continue to be, crucial to the success of this project.
 - My familiarity with the communal landscape empowered me to reach out to local organizers and organizations for the project's field days.
- What changes or adjustments did you make to your original plans, and why?
 - The original field day with farmers was supposed to involve working in the soil. After talking with co-sponsors of the field day from The Land Connection and the Savanna

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Institute, we decided that it would make more sense to do a tour of the land that was very Q&A focused. The post-event survey reveals overwhelming positive feedback.

- Did other fundraising efforts contribute to your project? What were they?
 - No other fundraising efforts explicitly contributed to the project. However, this project was conducted at Zumwalt Acres which is an LLC funded through sales of produce, donations through a fiscal sponsor, and grants.
- Are there opportunities for continuing your work on this issue? If so, please describe.
 - Yes, I remain on the leadership team at Zumwalt Acres, devising crop care plans and writing grants throughout the year.
 - I hope to pursue a masters in environmental management or forestry.
 - I expect to pursue a career in the world of traceable, verifiable, and certifiable agroforestry carbon markets, something I personally expect ZA to be at the forefront of in the coming years due in part to the perennial system planted through this project.

Reflection

- How do you define peace?
 - According to the Jewish tradition we nurture at ZA, peace (*shalom*) is an ethical obligation to which we are commanded to pursue. Peace is not simply the absence of social, ecological, political, or personal strife, but the constant cultivation of reciprocal love and understanding in the world.
- In what ways might your project contribute to peace?
 - High rates of erosion contribute to climate change and weaken the stability of our food system. As soil becomes less available, so too do the valuable ecosystem services which it provides, leading to possible civil strife and violence.
 - My project contributes to peace by holding soil in the ground in a part of a country which experiences some of the highest rates of erosion in the world, despite having some of the planet's most fertile soil.
 - Through field days with current professionals and Future Farmers of America, my project also establishes ZA as a hub of communal, intergenerational, and climate smart agricultural knowledge sharing across Iroquois County.
- What changes occurred? Short-term? Long-term?
 - One acre of annual crops was transitioned to an acre of trees and shrubs. These crops will be cared for over the next decades, holding in soil and feeding the local community.
 - A deer fence was purchased to protect the new trees and shrubs from mammal pressure.
 - Fifty people attended the professionals in agriculture field day. The post-event survey shows 95% of respondents rating their experience as "excellent". The post-event survey also shows overwhelming interest from farmers to implement new practices on their land to increase soil carbon content.
 - At the FFA field day, the agriculture program advisor for the Illinois State Board of Education asked me to connect him with one of the ZA mentors so that they could sit on the Illinois Agriculture Education Board, allowing for more climate smart agriculture to be incorporated into professional development across the state in years to come.

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- Identify a significant conflict you observed or encountered in your work (it could be any level of relationship: intra- or inter-personal, community/group based, and/or societal/global). How did you navigate the conflict and what would you like to learn more about as a result.
 - The largest conflict I encountered throughout this project involved the inclusion of first year apprentices in the professionals in agriculture field day. Many of the first-year apprentices at Zumwalt Acres wanted to take on a leading role in the event, despite not having any prior agricultural experience. As a group of twelve, we went through many renditions of what it might look like for the first-year apprentices to be included as facilitators. At one point, each of them was to speak a little bit at different stations across the farm. At another time, they were to lead the stations in their entirety. Because Zumwalt Acres is a youth-centered hub of knowledge sharing, I initially felt good about everyone being involved. However, as we approached the field day it became apparent that despite having reached a collective understanding that everyone would facilitate, the first-year apprentices did not have the time to appropriately prepare while working in the fields. I asked the group what they felt comfortable talking about. The consensus was clear: first year apprentices would rather watch and learn than cram the night before. Still, apprentices voiced their desire to somehow be included in the field day, even if it didn't mean facilitating. As a collective, we decided that during the field day we would briefly discuss the apprenticeship model as a perennial model for sustainable land stewardship and knowledge sharing in Midwestern agriculture.
 - This conflict taught me that even in organizations and projects typically driven by consensus, some decisions require long-term planning and care that cannot easily be altered after a certain point in the process. While feedback and suggestions should be encouraged, the feasibility of implementing changes as well as the intention for the predetermined plans must be kept in mind to keep plans coherent, low stress, and reasonable.
- Has your project changed the way you think about the world? How has the project changed, challenged, or inspired you?
 - The project has significantly changed the way I think we can address the global soil carbon crisis. Even with breeding for specific traits like high fat and protein nuts, I no longer think that fruit trees and shrubs can realistically make up a large portion of the global food and fiber market. This has inspired me to engage in research projects like The Land Institute's Silphium Ecotype Conservation Project, and use citizen science to help breed a perennial oilseed.

Personal Statement

A brief statement, suitable for use as a quotation, addressing the value of this project and what you have learned. Indicate the student's name (yours or your teammates') for quote attribution.

"This project roots itself in the concept of perennialization, which in this case does not just apply to crops. Here, it is about tending to a long-term system of agriculture that builds up soil health while addressing climate health and rural community health year-after-year." – Daniel Block, Brandeis Class of 2025.