

Green Team – Ecological Restoration of Plaster Creek

Jia Luchs, Caleb Mathai, Rachel Warners, Dr. David Warners, Deanna Geelhoed - Calvin University, Grand Rapids, Michigan

Introduction

Plaster Creek, though its watershed is home to many potential stewards in Grand Rapids, is the most polluted creek in West Michigan. The Green Team, a branch of Plaster Creek Stewards, is a group of students that work during the summer with a focus on research, education, and working directly to restore Plaster Creek. The team works toward this goal through urban green infrastructure, utilizing native plants to manage stormwater. Two Calvin students, Caleb Mathai and Jia Luchs, one high school intern, Ben Zwart, and twelve high school students living in the Plaster Creek watershed were hired by PCS this summer to work and learn together. The group was mentored by Rachel Warners, a recent Calvin College graduate. Nearby in Rockford, another Green Team for the Rogue River worked to maintain their watershed and joined the Plaster Creek team occasionally for projects.



The Green Team with the 6th largest Sycamore Tree in Michigan

Our Work

We worked alongside the high school students of the Green Team with our mentor Rachel Warners on various Plaster Creek Projects. We joined PCS in restoring our watershed through native landscaping, meeting community leaders, learning about environmental injustice, hearing about careers in the environmental field, and learning in the classroom about watershed ecology and reconciliation. A key focus of our work is to develop personal relationships with the students and to be an open and relatable resource of what college life is like and our vocational journeys to get there.

During our days together we learned about each other's diverse backgrounds, cultural variations, passions, preferences, dreams, and plans for the future. Days were spent split between classroom learning, learning in the field as well as practical implementation of knowledge. To conclude each session, photos and stories articulating the experience and the importance of our work were presented at a finale dinner for the students and their families. Students received awards and plants highlighting and affirming their unique personal characteristics.

Projects

Seed Collection

Collecting seeds is the first step in plant propagation. Students learned how to ID and harvest seeds. These seeds will be grown at Calvin and transplanted by next year's Green Team for future restoration in the watershed.

Native Plant Identification

Field identification, seed collection, native plant presentation.



The Green Team goes to Stanaback Park to collect seeds with Professor Dave Warners.

Rain Gardens and Bioswales

These are methods of green infrastructure that process stormwater that use native plants. These-bowl shaped gardens catch runoff water that would otherwise pollute the creek. Together with the community, we worked on planting and maintaining these gardens with Michigan native plants.

Research Shadow Day

For one day each session, students were matched with Calvin researchers to learn and participate in the research process for a college.

Catalyst Partners

We performed maintenance on a bioswale and native landscaping around Catalyst, an environmental consulting business in downtown Grand Rapids. During our visit, we received a tour of the most highly LEED-certified building from president Keith Winn.



Dune Clean-up Day

Through the Calvin Geology department, we cleaned up a fabricated dune that was constructed to observe the connections of our ecosystems. The students planted native plants around the dune and removed over 160 oak seedlings. We were also able to appreciate the native plants that will aid in the restoration of the sand erosion.

Green Team Student Reflections

"Nested watersheds are a cool life lesson that shows how we are connected and that our actions have an effect on others."

-Jillian, 2021 GT Student

"One experience that brought it all together was one of the speakers, Ron Yob. One of his quotes that stuck out to me was "you can't be angry about things that you can do something about and the things you can't do anything about. It taught me that you can make a difference in your own local ecology."

-Luke, 2021 GT Student

"I really loved coming back week after week seeing everyone's faces and just working together to achieve the goal by the end of the day. And with the other college students, it was a really cool opportunity to talk with them and ask about college life and the greenhouse and infrastructure in the area. Overall, making friends and having fun was the best part."

-Wendy, 2021 GT Student

"Environmental racism and injustice allowed us to come to an understanding that affluent neighborhoods obtain resources that impoverished neighborhoods did not have access to. It was really cool to hear other people's point of views on their own experiences living by the watershed."

-Yen Tran, 2021 GT Student

"Even though identifying the native and invasive plants were difficult to remember, it was enjoyable to learn about them. I also had fun transplanting at the Green House."

-Christina, 2021 GT Student



Concluding Thoughts

"Through this work we became better at learning through listening and leading by example. We hope the students leave this amazing experience with a better understanding of restoration, a pride in their positive environmental impacts, and confidence to pursue college and possibly an environmentally conscious career."



Green Team and Friends of Grand Rapids Parks take on the Calvin Ave Basin in the removal of invasive species.

Calvin Mentor Reflections

"I found it quite impactful to interact with leaders of green infrastructure at Catalyst in contrast with the leader of the "insert native american tribe". Both perspectives from the old and new schools of thinking had the same goal of environmental sustainability at heart. My understanding was augmented by the rich variety of perspectives we were exposed ."

Caleb, 2021 Senior at Calvin

"As a mentor this summer for the Green Team, I had the amazing opportunity to foster a nurturing environment by focusing on the educational portion of Ecology Reconciliation with the students. This experience allowed me to cultivate deeper relationships with the students and to engage in an incredible field of work."

Jia, 2021 Junior at Calvin

"Watching the students grow as individuals, as a group and closer to the world made this summer extremely rewarding. Jia, Caleb and I got to walk alongside them as they learned to identify plants, recognize ecological connections and grow in their understanding of place in the worlds they have grown up in. My favorite part of each session is the last week when the students have gelled and learned to feed off each other's energies, practicing their species identification and getting meaningful restoration work done with joy."

Rachel, 2021 Calvin Graduate

Acknowledgements

Many thanks to:

Rachel Warners and Jamie Vaughan, the team leaders for the Plaster Creek and Rogue River Green Teams.

Dave Warners and Deanna Geelhoed for all their work as Plaster Creek Stewards leadership.

Great Lakes Restoration Initiative, Grassroots Fundraising, The Sea Grant, and Calvin University for funding this summer's Green Team and for providing funding for the betterment of our local ecosystems.