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Plaster Creek Stewards Green Team Initiative

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Plaster Creek Green Team Initiative

Michael Akpabey, David Martinez Vasquez, Dr. Dave Warners Calvin University, Grand Rapids, Michigan



Introduction

Plaster Creek was a thriving ecosystem before European settlers arrived in Grand Rapids. Today, Plaster Creek exists as the most degraded stream in West Michigan according to the Michigan Department of Environmental Quality

The Green Team initiative, which stems from a partnership between Plaster Creek Stewards and Calvin University, provides a unique opportunity for local high school students to learn about Plaster Creek's watershed ecology. Students also learn how developmental activities relate to environmental justice issues, and how green infrastructure helps mitigate problems associated with stormwater runoff and improves the general well-being of the watershed over time



Figure 1: Rain Garden work with College Research Students

Our Work

As Green Team mentors, we helped high school participants learn to propagate, identify, and care for the native plants at Calvin's Lake Dr. greenhouse. We led the students in ongoing restoration projects located in residential and business areas of the Plaster Creek watershed, allowing students to directly improve the communities in which they live. Most importantly, we helped demystify the college experience for the high school students and help to prepare the next generation of environmental leaders.

During our daily work with High school mentor Gary Warners, who is a middle school science teacher, we learned about each other's diverse cultural backgrounds and passions. This was a safe space for developing amazing relationships while learning about environmental justice issues associated with our environment

Projects

Overview

This initiative works hand in hand with entities like the Department of Environmental quality, National Wildlife Federation, and the Kent County Drain commissioner to help mitigate Stormwater runoff problems The Calvin Avenue Basin was created to help process stormwater runoff by allowing Silver Creek, a tributary of Plaster Creek which is mostly underground, meander through retention ponds. Over the summer native plants were planted into these retention ponds to help process stormwater runoff and reduce pressure on the aging pipe infrastructure. These ponds reduce the velocity of runoff water allowing sediments to filter out. This helps improve stream health as it deals with sedimentation problems associated with faster-moving water.



Figure 2: Calvin Avenue Basin Work-Day

Students taking part in this program have learned to appreciate the efforts of stream restoration as they work with green infrastructure installation and maintenance. Students also worked at other locations in the watershed including Sherman Street Church and various native curb-cut rain gardens, which both will help improve the biodiversity of the ecosystem as they attract native birds and insects. Native plants are known for their numerous benefits to the environment and planting them at various locations will help raise awareness for the need of such plants for a healthy environment.

Seed Collection and Native Plant Identification

Green Team kids got to spend time with Dr. Dave Warners learning how to identify and collect seeds from native plants, which would be later grown for various projects in the watershed.



Figure 3: Prof. Warners talking about the importance of native plants

TREE PLANTING PROJECTS

The Green Team got the opportunity to plant 45 native trees at the Krieser Basin, Grand Rapids, to help process stormwater that flows into this basin.



Figure 4: Krieser Tree Planting Project

Tour of the Plaster Creek at Ken-Osha Park and Shadyside Park

- Working at Shadyside Park, Dutton, gave the Green Team an opportunity to see the headwaters of Plaster Creek and see how farming and other residential activities contribute to the pollution of the creek
- The tour at Ken-o-sha Park gave the team the chance to see problems like high sediment levels in the creek and also a chance to see the creek at a different residential and industrial climate.



Figure 5: Happy workday with the Green Team

Mentor Reflections

As efforts of watershed restoration is not something easy but rather a constant activity of hard work to which we are not naturally drawn to, we have developed a character of fortitude and persistence as we know the significance of our work for the environment. Listening to the joyful noises of insects and birds at healthy prairie projects, seeing slow clear flowing water in the creek, and other little things like seeing indicator organism like earthworms after a hard day's work of weeding, brings us a feeling of hopefulness, joy, gratitude, and satisfaction, knowing we are headed in the right direction as Christ's agents of renewal and stewards of our environment.

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