Demonstration Stormwater Garden Planting Project
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My name is Lisa Haglund, and I had the wonderful opportunity this spring and summer of working with Seattle area high school students, through UWBG's GROW Program, in planting up the Demonstration Stormwater Garden at the Center for Urban Horticulture. As a student of the University of Washington's Community, Environment and Planning Program I pursued an education on urban ecological design, looking at how community engagement and community-based projects can impact urban stormwater runoff in Seattle. My minors included Restoration Ecology, Urban Design and Planning, and Landscape Studies.

The Demonstration Stormwater Garden planting project began as my senior project for my major, Community, Environment and Planning Program in the School of Built Environments at the University of Washington. The Demonstration Stormwater Garden is a large stormwater retention and filtration system at the Center for Urban Horticulture created in 2005 to capture all of the stormwater runoff from the facility. Due to lack of funding, some the most visible sections of the stormwater garden were never planted up with native species as intended. Working with UW Botanical Garden's GROW Program, I enlisted Seattle area high school students to help implement the planting plan I developed in spring, 2011.

To successfully mitigate urban runoff, I believe it is essential to use a network of solutions, and to engage as many different community groups as possible in doing so. This helps to ensure social buy-in and long-term stewardship, adding to the longevity of a successful project. While I worked with numerous community groups on different projects during my time at the UW, there was a noticeable gap in the age range of volunteers I worked with, particularly young adults of high school age. As this age group will soon be inheriting the challenges surrounding freshwater supplies and non-point source pollution we grapple with today, it seemed especially important to engage youth in solutions to stormwater runoff. Working with the GROW Program gave me an opportunity to involve young people in implementing a project that offers a solution to urban runoff, and get youth interested in thinking about what else can be done to protect aquatic ecosystems and freshwater supplies in the future.

Before this spring (2011) the headwaters of the CUH stormwater garden consisted of two retention ponds filled with weeds and grass along with a few native sedges, as the funding for planting the stormwater garden dried up after the garden was built years before. In addition to raising young people's awareness of runoff and solutions to it, one of my goals for this project was to implement a planting plan that would showcase the site as the Demonstration Stormwater Garden it was meant to be originally. The addition of interpretation after the site's completion will further serve to educate visitors and students on the function of the stormwater garden and the native plants used to complete it.

My experience with the students began with visits to Seattle area high schools where I educated students on the importance of protecting fresh water supplies, and controlling urban runoff, and then explained how Low Impact Development (LID) strategies like rain gardens and stormwater gardens can help. We also discussed protecting aquatic ecosystems, the freshwater crisis the world will face in future decades, and threats to human and ecosystem health posed by overflows of Seattle's antiquated Combined Sewer System. Conversations on how LID measures like rain gardens can mitigate stormwater runoff followed the presentations, and students were encouraged to visit the site at the CUH on a future field trip to take part in working on the stormwater garden.

Working with GROW Program creator Patrick Mulligan, I had the chance to engage a multitude of students from 4 different high schools in exploring, learning about, and actually working on CUH's Demonstration Stormwater Garden. GROW provided funding for the field trips that brought the kids to the site. Nova high school students accompanied by Barbara Selemon joined me at CUH on the first field trip to learn about how the Demonstration Stormwater Garden functions. The students then conducted soil compaction tests, gathering valuable information for the successive planting of the site. On May 27th Mulligan and I were joined by ~15 Ingerham High School students who worked on the Demonstration Stormwater Garden all afternoon by removing turf and weeds, laying down weed barriers, and mulching. Throughout the day we were joined by ~ 50 Nathan Hale High School students who toured the Demonstration Stormwater garden, and took part in the site prep for planting the stormwater garden.

During the first week of August a group of 11 students from Lakeside High School put an amazing amount of energy and effort into the garden and, working with Mulligan and me, saw the project to its completion. They removed loads of weeds and turf, and planted every section of the retention pond: Slough sedge and Bulrush in the pooling area, Snowberry and Red-Flowering Current on the slopes, and Manzanita on the upland area. They even laid the irrigation hoses, cardboard, jute-cloth, and mulch to finish it all off.

From the first field trip to the last, I saw an awakening interest in plants, planting, maintenance techniques, and natural systems take root in many of these young people. Through experiential learning students gained knowledge of how plants and soils act to capture and filter out the contaminants in runoff, the value of freshwater and freshwater ecosystems, and how each of them can make a difference by implementing LID projects at their homes and schools. They also learned about the differences in function between weeds and native species, explored the different types of insect life in soils. With their hands in the soil, weeding, teasing out plant roots, or watering their handy work, these lessons should make a lasting impression. Being mature enough to grasp the significance of the harmful effects of runoff, this project offered an opportunity for these young adults to learn how their efforts were part of a larger, region-wide effort to stop stormwater runoff.

Teaching and working with high school-aged students in the field was an eye opening experience. Students who had been very quiet in a classroom setting began asking questions and showing genuine interest in the concept of LID once we began working outside. The majority of students who worked on the project seemed to genuinely enjoy working outside in the sun, and I was repeatedly asked questions about beetles, worms, grubs, a chrysalis found in a shovelful of soil, and the composition of the soil we were digging in (why is this soil a different color than that soil, why is it so dark?). Experiential learning opened up a multitude of learning opportunities as students explored the world of horticulture, and the natural world up close. Throughout this project I was asked questions related to entomology, ecology, soil science, botany, biology, sociology, and even philosophy related to urban planning.

One thing I learned while working with the GROW Program is that involvement in a project like this can truly be empowering for young people, and can leave students with a sense of ownership and satisfaction for the contribution they've made: in this case preventing runoff and beautifying the environment. Students expressed interest in revisiting the site, and in seeing pictures of the garden after it is completely grown in. Being able to get through to even a handful of high school students, and get them excited about working in the dirt to save our natural areas and to beautify the urban environment is incredibly gratifying. After my experience with this project I strongly believe that the GROW Program's approach of working with students in the classroom, and then bringing them into the field for hands-on education is an excellent model for developing skill sets, applying knowledge, and for cultivating life-long interests in horticulture in young people.

This project was supported through the donation of plants, tools, and mulch from the Center for Urban Horticulture, the UW Restoration Ecology Network, the Washington Arboretum, UW staff, and the Snohomish County Nursery. Expertise was provided by UW professor Kern Ewing and CUH staff. The network of knowledge and resources that I drew from over the months of April to May, and the support of the GROW Program made it possible to complete this project in a very short amount of time, with minimal monetary expenditure. An additional benefit of the Demonstration Stormwater Garden planting project is the heightened interest of CUH faculty, staff, and UW Horticulture graduate students who often pass through the site during their work days. This up-swell of interest and appreciation for what we accomplished during this project will hopefully lead to stewardship of the garden, and continued interest in the students who helped create it in years to come.

-Lisa Haglund, August 2011