Project Pollinator: Creating Connections between Youth and the Environment in an Urban Area

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Abstract

The purpose of this project was to connect youth with the environment by building pollinator and food gardens in an urban area. A diverse core team of experts collaborated to construct gardens and conduct environmental education lessons at a community center in Auburn, New York. This project emphasized the value of collaboration and non-traditional learning opportunities, along with the importance of youth and citizen involvement in hands-on activities to develop connections with nature. At the conclusion of the project, the author created a concise, comprehensive pollinator gardening guide to expand this community of practice and support others engaged in similar future efforts.

Keywords: pollinator conservation, urban gardens, youth, environmental education, community collaboration

The Origin of Project Pollinator

About three years ago, I found myself in a conversation about pollinator and food gardens with the U.S. Fish and Wildlife Service (FWS) Visitor Services Manager at the Montezuma National Wildlife Refuge in Seneca Falls, New York. The impetus for this meeting was my dual desire of addressing the growing divergence of youth and the environment—specifically what Richard Louv (2009) calls Nature-Deficit Disorder—and increasing support for pollinator conservation. Pollinators are responsible for a third of the bites of food eaten each day, yet they are facing increasing habitat loss and degradation. My approach for addressing these focal areas was the promotion of citizen science opportunities, as they can allow for people's discoveries of science to turn into scientific engagement (Cooper, Dickinson, Phillips, & Bonney, 2007). Specifically, the opportunity of joint pollinator and food garden creation would allow for a direct connection between citizens and pollinators through the food produced and consumed. The FWS's interest in encouraging the provision of healthy food for local schoolchildren solidified our partnership, and we set out to determine the location for this project within a nearby city in Upstate New York.

We chose the city of Auburn, New York to have localized impact in an urban setting supporting disadvantaged youth. In 2016, the Auburn City School District had a K-12 enrollment of 4,164 students, 58 percent of which were economically disadvantaged, and the district's multi-tiered education model revealed the necessity of specialized educational opportunities (NYSED, n.d.). I contacted several schools and various associates within Auburn to determine the best location for the project and gardens, ensuring high exposure, practicality, utilization, and benefit. The Booker T. Washington Community Center (BTW) met all of these categories by having a centralized location and facility use by multiple schools within Auburn, at the time actively engaging over 100 elementary and high school students.

After solidifying the location, we built a core team of people with complementary skills and experience. Joining the team were two of BTW's program leaders, to provide connection to the community center and incorporate our program activities into their schedule; a local permaculture expert, to provide gardening expertise and to tie BTW into the neighboring gardening efforts; and a master gardener through the Cornell Cooperative Extension, to provide additional gardening and environmental education lesson support. One long-term hope for the food garden was to eventually produce a surplus of food that could be donated to local food banks. This led to the final core team addition of the Food Security Director at the Cayuga-Seneca Community Action Agency, who provided a greater community connection.

After the team was formed and the initial plan developed, we applied for and received an FWS 2016 Region 5 Visitor Services Small Grant Projects award. This funding support covered all of the planned activity costs and allowed the project to move forward.

Project Initiatives

The ultimate goal for this project was to construct gardens to provide healthy food sources for pollinators and students, as well as learning opportunities for the citizens of Auburn. The evaluation of these efforts was anecdotal, focusing on the qualitative effects as observed and expressed by the project participants. The project was divided into three initiatives: 1) construction of pollinator and food gardens, 2) development of an environmental educational program, and 3) plans for ongoing efforts (see Table 1). The first and third initiatives were addressed with a series of meetings regarding garden specifics, such as species selection and garden certification, and plans for continued collaborative support for ongoing activities at BTW.

For our second initiative, we aimed to adhere to BTW's hands-on learning approach to mentally and physically engage the students, who ranged from kindergarten through high school. Environmental education provides learning and engagement opportunities beyond the confines of a classroom. Early-life perceptions and experiences can have important impact on children's connections with nature; thus, activities addressing the gap between youth and the environment are essential (Awasthy, Popovic, & Linklater, 2012; Louv, 2009; Pawelek, Frankie, Thorp, & Przybylski, 2009). Additionally, the creation of community gardens further integrates civic engagement and environmental stewardship with food production, which can promote social learning, neighborhood well-being, and positive social and cultural relationships (Krasny & Tidball, 2009; Pawelek et al., 2009). Based on this, we constructed lesson plans that would engage the various students' ages and needs by incorporating core team member knowledge with previously developed environmental educational material regarding pollinator conservation and food production (see Websites, below).

Table 1. Project Pollinator initiatives, objectives, and timeline

Initiative	Objectives	Timeline (2016)
1: Construction of pollinator and food gardens	Decide location and size of gardens and plant species	January
	Source nursery for plants	February
	Secure volunteer support for construction	March
	Construct pollinator garden	April
	Restore and plant food garden	May
2: Development of environmental educational program	Develop lesson plans and schedule	March
	Initiate lessons at gardens	April
	Continue lessons throughout summer	May-August
3: Plans for ongoing efforts	Develop garden maintenance plan	April
	Assess garden health to plan improvements	August
	Determine next year's gardening and educational activities	September

A Community of Learners

Wider learning experiences can be cultivated from interactions between adults and children, where children can internalize information and construct social and cultural information systems that can assist with future knowledge progression (Tellado & Sava, 2010). Additionally, having an opportunity to practice skills learned is a vital component of developing conservation behaviors (Lewandowski & Oberhauser, 2016). An interactive learning opportunity for practicing skills occurred on a cold Sunday morning in April, when core team members, local high school students, and college students from a nearby university joined together for the initial pollinator garden preparation (Figure 1). This group consisted of varying levels of expertise, allowing the entire activity to be a learning experience for all. Core team members shared knowledge regarding garden bed preparation, using a sheet mulching technique, and information about pollinators, including their importance and conservation efforts. On this day, teachers became students as they learned about gardening techniques and rich dialogue occurred as the students and volunteers became more intrigued with the process and its purpose to support healthy gardens and pollinator species. This collaborative, hands-on activity built further excitement and commitment to the project.

Figure 1. Pollinator garden preparation volunteer group on April 10, 2016

Additional interactive learning opportunities occurred with the continued construction of gardens over the next few weeks. On Earth Day (April 22), the core team and high school students attending BTW planted the pollinator garden, first learning how to transplant nectar plant species, and then breaking into self-selected groups to plant (Figure 2). Students were excited and inquisitive about the project and the positive impact it would have for pollinators, remaining engaged throughout the gardening activities and discussions. Excitement for and connections to the pollinator garden seemed to increase as more students became engaged throughout the summer, including project-based lessons and watering activities for elementary students (Figure 3). In May, core team members and numerous students prepared and planted the food garden. During one of the initial environmental lessons, the students chose which types of food they wanted to grow

in the garden. By planting these food species, the students had the opportunity to gain greater ownership of the project. To promote further connection and ownership, we held a garden naming competition among the students at the end of the summer. The winning name, "BTW's Butterfly Oasis," was used for registering the garden in the Pollinator Partnership's Million Pollinator Garden Challenge (see Websites, below).

Figure 2. Planting the pollinator garden on April 22, 2016

Figure 3. Pollinator garden growth progress on August 15, 2016

Critical Moments

Two of the initial critical decision-making moments in this project were the selection of location and recognition of a lack of expertise. Originally, we had planned to

partner with a high school in Auburn to magnify the project's impact by reaching a large group of students. However, a restricted timeline, regulations associated with school partnerships, and the desire to reach students of various ages ultimately led to our collaboration with BTW. This location proved the most effective regarding impact as it allowed us to reach and regularly interact with over 100 students from the various schools in Auburn. After the location was selected, I realized that we would need multiple people to fill our knowledge gaps to create a successful project. I determined the connections we needed and used my networking ability for the engagement of several experts in various fields. Their dedication of time, energy, and skills was vital in forming a committed core team branching the knowledge areas essential for success.

Another critical moment was the informal evaluation of the project. Although we set initiatives and objectives to meet, we did not devise a formal evaluation process to generate quantitative results. However, an informal qualitative validation of our methods to create environmental connections with youth occurred early in the project implementation process. During the planting of the pollinator garden, a student excitedly came over to me with a plant to reveal two small snails she had found (Figure 4). She had become enamored with them and our conversation revealed why. She admitted she had never previously gardened and she did not go outside much, stating that the neighborhood had "just changed" and it did not feel safe anymore. She said she would like to do more activities like gardening, but she did not think it was possible living in the city. I suggested there were simple ways to connect with nature, such as through the haven provided by gardens at BTW, and that she could do these activities at home by creating a small garden in her yard or a window box. Witnessing her connection to nature within the garden and realization that she did have safe and simple outside activities provided evidence that our methods could have lasting positive impacts for participants.

Figure 4. Student discovery of snails on one of the pollinator garden plants

A final critical moment was revealed during my self-reflection on our efforts. When I started this project, I believed that I had a "black thumb" because I knew very little about gardening, which proved to be a common belief among many of the core team members. Throughout my months of research and consultations with garden experts, I realized there was a vast amount of information available, but it all lacked an obvious, tangible connection point from which to begin. I then considered how to create a larger impact from our efforts at BTW to reach a broader audience. The resulting idea was the creation of a gardening guide outlining the easy, yet comprehensive, steps we took that could provide people their own connections to nature through gardening. To determine interest and applicability to a variety of stakeholders, I reached out to landowners, managers in a private corporation, governmental employees, and church members. The consensus among everyone was that they would welcome participation in gardening activities, especially to support pollinators, but they lacked the time and knowledge to begin. A simplified gardening guide would be crucial for their future participation. Thus, I developed the Project Pollinator Gardening Guide (see Websites, below). While not exhaustive, the guide provides information for starting a garden and how to use the garden in environmental lesson planning. The guide was placed on the Montezuma National Wildlife Refuge's website in 2016 for greater accessibility and has since been used by members of the core team to encourage others to participate in pollinator conservation and to build greater connections to nature.

Reflection and Recommendations

The success of this project resulted from its collaborative approaches. We pulled together local knowledge and capitalized on individual team member strengths to support each initiative toward our common goals. This created a mosaic of teaching styles and learning opportunities, which ultimately led to greater impacts. The excitement of everyone involved was palpable and the increased interest and desire for participation among the students and volunteers was highly rewarding. The diverse core team involvement ensured the impacts spread beyond the initial BTW location and goals as we eagerly shared across our respective organizations, essentially forming and expanding an active community of practice (see Wenger, 1998). A cross-pollination of ideas occurred during this project and our results were then shared through our individual personal networks. This type of cross-collaboration is essential not only for the success of a project, but also for its ongoing proliferation in surrounding areas (Wenger, 1998).

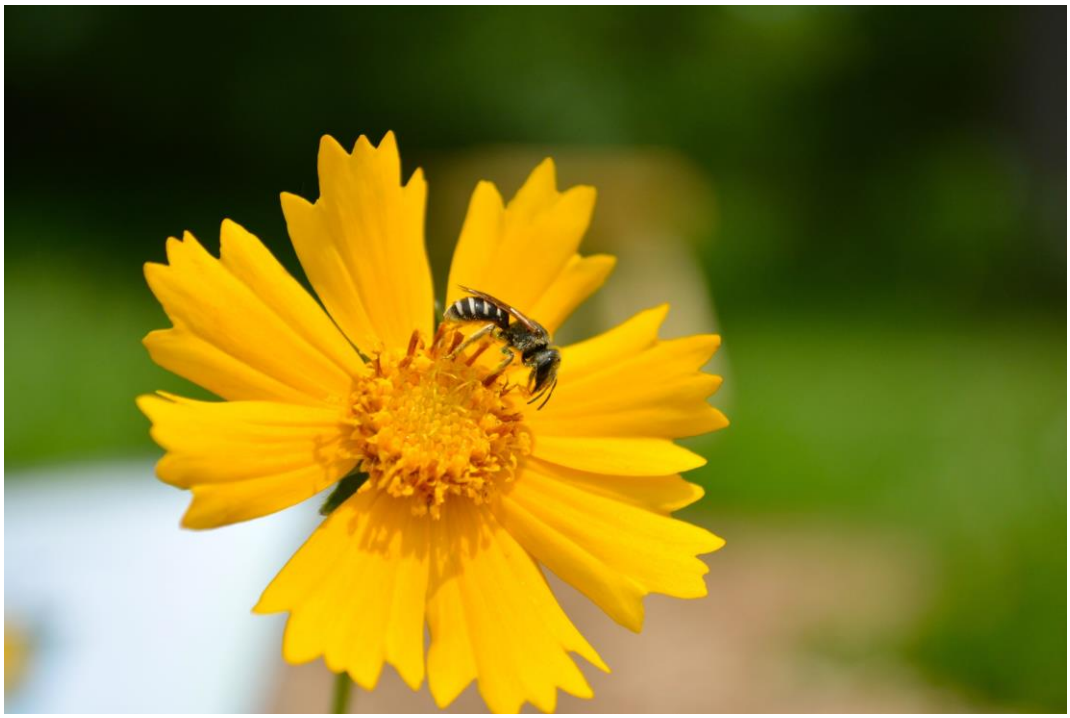
In fall 2016, the core team met to evaluate the entire project to determine if goals were met and to share overall feelings regarding the project's success or otherwise. Everyone stated they were pleasantly surprised and encouraged by how well everything had developed. In a few short months, we were able to meet all of our objectives and create a safe, new environment for students to connect with nature. The BTW program leaders reported that the students were very eager to participate in our program as part of BTW's project-based learning approach, providing evidence of project efficacy.

The team's main criticism of the project was the lack of community awareness regarding the early efforts. This has since been addressed through increased BTW

sharing of the gardening activities online through their Facebook page and communications sent home with students. The gardens have grown since their construction, creating greater interest, awareness, and involvement among the citizens of Auburn (see Rocheleau, 2017).

Based on our efforts and informal evaluations, I have four main recommendations for anyone interested in implementing a project similar to Project Pollinator: 1) allow for sufficient planning time, 2) create early and continuous awareness opportunities for the project, 3) start construction in the fall, and 4) secure ongoing summer support. First, sufficient time for planning a project like this is essential because it allows for contingency plans if something should not eventuate. It would also allow for necessary approvals should the project be on a larger scale or involve partnerships with schools. Second, plan for ways to increase project awareness, either through social media platforms, articles in the local papers, or sending newsletters regarding activities to parents. Higher visibility of projects like these may lead to greater support and, subsequently, continuation. Third, a fall start of garden bed preparation for a subsequent spring planting would allow for the accumulation of organic garden materials, expectedly leading to greater garden success. Finally, a plan of action for ongoing summer support is essential, especially if these gardens are at school locations. This is even more critical in years with inclement weather conditions. Working with a community center may prove beneficial as there will be ongoing presence and activity throughout the summer.

Figure 5. A pollinator at work in BTW's Butterfly Oasis



This grassroots project provided engaging learning opportunities and a direct connection to the environment through hands-on gardening activities that youth in this urban area might otherwise avoid. It also fostered new partnerships and provided enhanced green spaces that will benefit myriad species. Since the initial efforts, these gardens have continued to grow and thrive, and also maintained their place as a favorite project-based learning activity among the students at BTW. The gardens have also become a refuge for pollinators, providing suitable habitat within this urban area (Figure 5). The majority of the core team have remained actively involved, teaching new students and encouraging their connectedness to nature and the community, while also ensuring the ongoing efforts of the project. This simple garden idea has grown from initial hopes of supporting pollinators and producing healthy food for local youth, to providing essential connections between people and the environment, hopefully affecting positive change for years to come.

Shannon Westlake *is a lifelong learner and advocate for the environment, hoping to create pollinator habitat and citizen connections to nature everywhere she goes. Shannon's interest in pollinator species began in her youth and continued through her academic career, leading to the creation of Project Pollinator in Auburn, New York during her Master's program. Her work for pollinator conservation and citizen involvement has continued through her dissertation research efforts. Shannon is currently a Ph.D. candidate in the department of Wildlife, Fisheries and Aquaculture at Mississippi State University in Starkville, Mississippi.*

Websites

For more information about the Project Pollinator Gardening Guide, please visit:

- https://www.fws.gov/uploadedFiles/ProjectPollinator_Guide_AppleDevices.pdf
- https://www.fws.gov/uploadedFiles/ProjectPollinator_Guide_NonAppleDevices.pdf

For more information about various pollinator lesson plans and hands-on ideas, please visit:

- Growing Minds https://growing-minds.org/lesson-plans-landing-page/
- Pollinator Live https://pollinatorlive.pwnet.org/teacher/lessons.php#8
- Pollinator Partnership's Million Pollinator Garden Challenge https://www.pollinator.org/million-pollinator-garden-challenge
- The University of Minnesota Monarch Lab https://monarchlab.org/education-and-gardening/curricula
- Whole Kids Foundation https://www.wholekidsfoundation.org/school-gardens

References

Awasthy, M., Popovic, A. Z., & Linklater, W. L. (2012). Experience in local urban wildlife research enhances a conservation education programme with school children. *Pacific Conservation Biology, 18*(1), 41-46.

Cooper, C. B., Dickinson, J., Phillips, T., & Bonney, R. (2007). Citizen science as a tool for conservation in residential ecosystems. *Ecology and Society, 12*(2), 1-11.

Krasny, M. E., & Tidball, K. G. (2009). Community garden as contexts for science, stewardship, and civic action learning. *Cities and the Environment (CATE), 2*(1), 8.

Lewandowski, E. J., & Oberhauser, K. S. (2016). Butterfly citizen science projects support conservation activities among their volunteers. *Citizen Science: Theory and Practice, 1*(1), 1-8.

Louv, R. (2009). Do our kids have nature-deficit disorder? *Educational Leadership, 67*(4), 24-30.

New York State Education Department [NYSED]. (n.d.). Auburn city school district enrollment (2016-17). Retrieved from https://data.nysed.gov/enrollment.php?year=2017&instid=800000054614

Pawelek, J. C., Frankie, G. W., Thorp, R. W., & Przybylski, M. (2009). Modification of a community garden to attract native bee pollinators in urban San Luis Obispo, California. *Cities and the Environment (CATE), 2*(1), 7.

Rocheleau, K. (2017). 'It takes nothing and makes food': Auburn center students learn gardening through program. *The Citizen*. Retrieved from https://auburnpub.com/lifestyles/it-takes-nothing-and-makes-food-auburn-center-students-learn/article_6da3dc23-189b-56f4-ab52-55b9b9e9068c.html

Tellado, I., & Sava, S. (2010). The role of non-expert adult guidance in the dialogic construction of knowledge. *Revista de Psicodidáctica, 15*(2), 163-176.

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems Thinker, 9*(5), 1-10.