

### **Project Statement**

In impoverished urban areas, opportunities for citizens to interact with natural spaces can be few and far between. Small parks and trickling streams may provide fleeting glimpses of green life, but they are frequently neglected, overgrown, and polluted. In west Contra Costa County, California, just ten miles from the UC Berkeley campus, the story is very much the same. Wildcat Creek twists through communities like Richmond and San Pablo on its way to San Francisco Bay, confined to a steep, narrow channel lined with trash. Encouraging support for and enjoyment of these ecosystems is extremely complex, as these communities face immense challenges: some community members are afraid to leave their homes, let alone enjoy a walk in an open space (Stevens, 2013).

Many of the streets in Richmond and San Pablo come to a dead end when they reach Wildcat Creek (Figure 1). In recent years, less-than-certified trash haulers have made a habit of dumping their day's collection into the riparian corridor at the end of these dead-end streets, creating a hazard for life in the Creek and in the community (see Figures 2-4). My project proposes strategically placed community gardens as a solution to this issue, a small but significant step towards environmental justice, community engagement with nature, and ecosystem health. I will partner with two non-profit organizations: Urban Creeks Council (UCC), which pursues stream restoration throughout the San Francisco Bay Area, and Urban Tilth (UT), which promotes urban agriculture in West Contra Costa County. I hope to cultivate a relationship between the community and ecosystem that is mutually beneficial rather than adversarial, such that the gardens will be an educational tool and a source of food and community pride.

Degraded ecosystems can bring significant challenges to the communities in which they exist. Overgrown, weedy ecosystems can obscure sightlines and facilitate drug use or crime (Pine,

2012). Pollution in an urban creek can lead to public safety concerns, both on-site and downstream. The field of environmental justice has revealed that low-income communities have to confront these challenges more often than those living in more affluent areas (e.g. Morello-Frosch, 2002; Bullard et al., 2007). Safety concerns drive people away from natural spaces, and create the sort of adversarial ‘people v. nature’ dichotomy that has encouraged the conquest of ‘untamed’ ecosystems throughout history. If children growing up in impoverished neighborhoods are taught to fear or avoid the few natural spaces in their lives, what sort of citizens will they make? This becomes particularly important when considering that environmental issues like climate change and sustainable food systems are becoming more and more central to being an informed citizen in the 21<sup>st</sup> century. Citizens isolated from nature not only lose the physical and mental benefits (e.g. exercise, stress relief) associated with outdoor activity, they also are denied an education central to citizenship.

Through discussion with my partnering organizations, we have developed a plan to use raised-bed community gardens to combat some of the issues facing these low-income communities. These gardens aim to help local citizens grow some of their own food and encourage them to find out more about what they eat and where it comes from, a first step towards ensuring equitable access to high-quality food for these communities (a major concern of the food justice movement, see Block et al., 2012). Encouraging healthy eating and interaction with natural spaces will also help combat obesity, a serious concern for low-income communities with low access to healthy foods or recreational spaces (Alexander et al., 2013). Creek restoration and garden construction will be pursued in concert, such that the Creek restoration will facilitate the success of the garden and vice versa. The raised beds will be placed in such a way that prevents the illicit trash-hauling pickups from dumping debris in the riparian area.

Invasive vegetation will be removed from the riparian corridor and replaced with native plants that support pollinators (e.g. bees), which will help sustain the garden. We will develop a ‘citizen science’ program, which will allow local residents and students from local K-12 schools to monitor the abundance of these pollinators through time. It is our hope that these gardens, and the natural space in general, will become a source of community pride, and thus will be sustained through time in such a way that provides for ecosystem and community health.

### **Project Plan**

#### *June-September 2013*

The critical first step for this project is the identification of a specific project site or sites within the Richmond or San Pablo community (See Figure 1 for possible site locations). The expertise and networking possibilities brought about through collaboration with UT and UCC will be a crucial part of this identification process. Identification will involve significant door-to-door work, gauging interest to find the necessary amount of community support that would make a project like this feasible and sustainable over the long term. UCC and I will also work to gain institutional support from various local governmental agencies: the Regional Water Quality Control Board, the Cities of Richmond and San Pablo, and Contra Costa County, for example. Garnering the community support necessary to implement and sustain a project like this will likely be the most difficult part of the process.

Once we have found a project site and have confirmed our ability to work at the site, we (all project partners) will conduct an initial site assessment (existing biodiversity, abiotic conditions in the creek, etc.). Our initial outreach will lead to a meeting with all interested parties to determine an effective course of action and to set specific goals for the project, ideally near the

end of August or beginning of September. Mailers and flyers will spread awareness and gather community interest in the project, with contact information for the project leaders provided.

*September-December 2013*

Initial work will begin at the project site. All work at the site will be done in coordination with community volunteers. UT and I will supervise most of the work at the project site. Tasks to be completed during this phase include picking up trash, removing invasive (weedy) species, selecting and propagating native plant species to be grown in the garden and riparian area, and developing designs for the raised beds. Community members will be updated on the project's development and opportunities to be involved via mailers and flyers.

*December 2013-March 2014*

Volunteer events will at this point be based around building and planting in the raised beds, and planting pollinator-friendly plants in the riparian corridor. Construction of the beds and plantings will ideally be completed by the end of February of 2014 so that they receive significant natural rainfall before the start of our dry California summer. We will begin to develop educational signage highlighting community involvement in the restoration of the site and the ecology of the on-site ecosystem. Pollinator monitoring will also begin at this stage, in coordination with local students and residents. Throughout this stage of the process, we will coordinate with local schools (e.g. nearby Helms Middle School) to organize field-trip type events where students can sow seeds, identify pollinators, and learn about local agriculture.

*March 2014-June 2014*

Project goals are completed as identified the previous summer. Though we are certainly open to the idea of installing gardens at multiple dead-end streets at Wildcat Creek, we would consider it a tremendous success to have one such garden completed by the end of the project period,

given the difficulty of establishing community support in challenged urban areas. We will install educational signage and any other necessary permanent structures at the project site. I will work with City officials, community members, and with Urban Tilth to delegate the necessary responsibilities (e.g. picking up trash, sowing new crops) that will sustain the garden and creek indefinitely into the future. Support from local citizens, identified in the first phase of the project, will be critical to ensuring the garden produces a harvest beyond the first year. Finally, UCC and UT consider this a 'pilot' project, and there is certainly a possibility that I could develop other similar project sites in future years, building off of the successes and learning from the failures of this project.

### **Continuity and preparation**

Urban creeks have been a significant part of my life from a very young age. I can specifically remember getting antsy near the end of my Little League games, my eyes drawn toward the lush riparian habitat just beyond the rightfield fence. Something about these refuges for natural life in the midst of suburban or urban settings has always attracted me, and I've been lucky enough to engage with these unique ecosystems during my time here at Cal.

I feel that my Berkeley experience has provided me with invaluable skills and practical knowledge necessary to complete this project. During my last two years here on campus I have been the Lead Restoration Coordinator for the Strawberry Creek Restoration Program (SCRP). The SCRP works to restore native biodiversity along the banks of Strawberry Creek here on campus, both by removing non-native plant species and by planting native species. I scheduled volunteer events with campus students and members of the larger East Bay community, and led these events in a way that facilitated an educational, safe and satisfying experience for the volunteers. Volunteers for these events could be as young as 10; others were in their 50s or 60s.

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Furthermore, as the lead coordinator I designed campus-wide restoration plans for each semester, and coordinated the activities of the six student restoration coordinators.

My academic coursework also has played a substantial role in preparing me for this project: courses in ecology and several semesters in Professor Katherine Suding's Restoration Ecology lab have challenged me to explore the ways we can manage natural spaces for the benefit of all living things. Furthermore, my honors thesis focuses on determining which native plant species will survive, reproduce, limit reinvasion by non-natives, and prevent pollution of local waterways in the unique ecosystems along Strawberry Creek. I applied for and received three grants to fund my thesis project.

Working with the SCRP has put me in contact with leaders in the environmental community here in the East Bay, including Urban Creeks Council, numerous native plant nurseries, and community groups interested in volunteering. I hope to continue building on these contacts through this project.

I would be honored to carry out this project with the help of the Judith Lee Stronach Baccalaureate Prize. Thank you for your consideration.

#### **Works Cited**

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