

Stewardship Education and Action in the Laguna Creek Watershed

Introduction

Once a rural dairy community, the City of Elk Grove recently became the fastest growing city in the nation among large cities (Census, 2005). The open flooded grasslands that characterized this area were turned into housing track developments and shopping centers with wide streets, turf grass lawns, and concrete pathways. Many of these developments are backed up against Laguna Creek. Laguna Creek conveys approximately 50% of the city's stormwater runoff and has direct flow into the Sacramento River and seasonal flows through Stone Lakes National Wildlife Refuge. The increase in impervious surfaces from development has had serious impact on the habitat of the creek and threatens the quality of water that effect not only local residents of the watershed but also the human and non-human residents of downstream watersheds and the Bay Delta system.

In 2002, in response to the rapid pace of development in the watershed, the Laguna Creek Watershed Council (LCWC) was formed. The Laguna Creek Watershed crosses four major jurisdictional boundaries; unincorporated Sacramento County, the City of Rancho Cordova, the City of Elk Grove, and the City of Sacramento. More than half of the lower watershed is within the City of Elk Grove, which is the primary focus for this project. The LCWC, whose members include watershed residents, community group leaders, local government agency representatives, and Elk Grove city staff, is one of the most active watershed groups in the Sacramento region. The LCWC has outlined a need for education and outreach in relation to watershed resources and consistent and long term monitoring of water quality and watershed health. This project was an attempt to help meet those needs through a participatory approach to research and project development.

Community Partner:

The core community partner for this project is the Laguna Creek Watershed Council (LCWC). The mission of the LCWC is "to protect the health of Laguna Creek and its tributary streams by educating residents, promoting active community participation, and fostering partnerships and projects that achieve long-term, balanced solutions with mutual benefits to all stakeholders." (LCWC Draft Management Plan, 2008).

Environmental Management Issue:

There are several environmental management issues related to creek health and water quality that are tied to this project. The majority of these issues are related to the impact of urban runoff and watershed health. According the US Environmental Protection Agency, urban runoff is a significant source of "constituents of concern" for drinking water impacting the Sacramento and San Joaquin Rivers and their tributaries. As a tributary stream to the Sacramento River, contaminants entering Laguna Creek will impact the quality of downstream drinking water. In addition, the LCWC has expressed

concern over the nutrient loading and change in stream profile that occurs through the seasons and in conjunction with proximal development projects. Previous work has shown an increase in non-native weed species and lowered amounts of dissolved oxygen. However, no research has been conducted on nutrient loading in Laguna creek. The issue of stormwater retention and the overuse of drainage basins in development planning was also cited by the council as a major environmental management issue effecting the creek.

Through the course of this project we explored which of these issue might be most appropriate for a community education and outreach project and different methods for engaging local residents, schools and organizations with these issues. School groups participated in monitoring events accumulating base line data on water quality. School groups also actively engaged in school and residential based projects focused on improving water quality through landscaping practices.

PAR Approach:

According to Cornwall & Jewkes (1995) the researcher following a Participatory Action Research (PAR) approach takes on the role of a catalyst and facilitator. Cornwall & Jewkes (1995) reference the goal of PAR as an approach to research that aims to establish a more collaborative or even “collegiate” level of participation where the researcher (in this case, the graduate student) and the community partner are engaged in exercises of mutual learning and the community partner maintains control of the direction of the research process. In this project, all project plans and actions were developed collaboratively.

I discussed the PAR approach with the LCWC coordinator and my desire for collaboration on the project. The ideal picture of PAR with the purpose of increasing the “well-being-economic, political, psychological and spiritual of persons and communities and to a more equitable and sustainable relationship with the wider ecology of the planet of which we are an intrinsic part” (Bradbury & Reason, pg 202) was taken as a model for the project and a means for goal setting. However, we recognized the limits and feasibility for simultaneous achievement of such a broad range of benefits for the community as a result of this project. We instead focused on what we brought to the collaboration in terms of strengths and skills and attempted to base project development actions on our mutual assets instead of deficits. In addition, the need for practicality in the project was highlighted through the course of the partnering relationship. The financial and time constraints of the council were in constant consideration in the planning and development.

Structuring the Collaboration:

In the initial months of the project, I met periodically with the LCWC coordinator and we discussed the work of the LCWC and my interests as a graduate student. The coordinator provided me with connections and I continually offered my services to him and the council. A typical interaction took place in stages where the coordinator would tell me about an event I should attend or a person that I should meet. I would next pursue this connection and then report back to him what plans were developed as a result.or example, the LCWC coordinator facilitated my connection with the Fallbrook Neighborhood Association. He contacted the association and helped orchestrate a meeting. After meeting a key figure in the association, who is also a teacher at the local

high school, we decided upon a project that met all of our common interests. Expanding this collaboration, we worked with a UC Davis master gardener to help his students complete a memorial garden project at their school. The garden project was an opportunity to give his students career experiences (attending the local eco-landscape conference), to engage the students and school community on issues of urban runoff (creating a drought tolerant native plant garden) and complete a school funded project (the establishment of a garden space to remember students and faculty who had passed away). Months after the project, the LCWC coordinator and I were both asked to lend support to the high school program at an audit meeting of the program by the California Department of Education. This type of interconnected reciprocity has been characteristic of my associations with the LCWC coordinator, the watershed council, and the larger watershed community.

Successes and Lessons Learned:

The LCWC was interested in establishing a stream stewards program in the watershed. The two main components of the program are stewardship education and stewardship action. As part of this project we were able to build upon the program through expanding partnerships in the watershed. In the stewardship education portion of the program, we worked through partnership with the local community services district to provide outdoor education experiences for preschool-3rd grade youth. The program is available to school groups as well as after-school and club groups. Through the volunteer time of various recruited members of the community and organizations we also established an educational walk program at the creek parkway.

In our efforts to engage the community in their creek and creek resources we learned more about what interests people about their creek. We found that free choice learning experiences that had a specific theme that was not “the creek” were more attractive to local residents. Events that showcased birds, bugs, or other residents of the creek promoted higher attendance than events that offered a creek experience or focused on the residential creek connection. In the walking creek survey, we also discovered that visitors to the creek had a strong interest in learning more about the wildlife in the area and providing experiences for their children that engaged them with the creek. Residents expressed concern about the amount of trash in the creek (indicating a level of concern for the creek), however, visitors to the creek parkways had little to no interest in stewardship activities that were residential based. These findings were consistent with the residential survey conducted at the start of the project where 95% of the 180 responding residents reported that creeks were important for “recreation purposes.”

Challenges and Next Steps:

The collaborative research questions that we intended to use for this project were related to the effectiveness of volunteer led efforts for engaging the community on issues of watershed health and policy change. However, one of the challenges of the project was recruiting volunteers. As a result, our preliminary research questions led us to a larger questions of how to successfully recruit volunteers instead of how these volunteers can effectively assist the watershed council and fill a community and environmental need.

The majority of volunteer efforts that took place were related to school-based events (for example water quality sampling as a part of World Water Monitoring Day).

The non-student volunteers that became involved in the project had some pre-established association with the council. For example, a local watershed resident who had frequent contact with the council and girl scout group members and leaders where one of the mother leaders regularly attended council meetings.

The need for engaged volunteers has only grown in light of the recent economic decline. The financial constraints of the LCWC (and organizations in similar situations) require volunteer efforts. In addition, the community in the watershed benefits from genuine involvement in the planning and actions that take place in their watershed. Understanding the motivations of participants in the stream stewards program has helped guide future planning efforts. Next steps in the research process are focused on finding out what most interests a broader cross-section of the community in their local watershed environment and how organizations such as the LCWC can better serve the community of watershed residents. Interviews with key community leaders (in the larger Sacramento watershed) and organization members with vested interest in the watershed will be incorporated into future research plans.

Bradbury, H. & Reason, P. "Issues and choice points for improving the quality of action research", In Minkler, M. & Wallerstein, N. *Community Based Participatory Research for Health*. San Francisco, CA: Jossey-Bass.

Cornwall, A. Jewkes, R. (1995). What is participatory research. *Social Science Medicine*. 41 (12). 1667-1676.