

# Agua Pura and Los Pescadores: Latino Youth and Families Engage in Water Resource Issues

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## Abstract

Agua Pura (Pure Water) began in 1999 as a partnership of the University of Wisconsin Cooperative Extension's, *Give Water A Hand*, with Santa Barbara County UCCE 4-H Youth Development Program and Santa Barbara City College. The program's goal was to promote better understanding of how community educators and youth leaders can involve Latino youth and the Latino community in watershed protection and adaptation of resources to meet the community's needs and interests. The objectives of Agua Pura/Pescadores program are to: Increase Latino youth's interest in science and environmental literacy; provide effective watershed education programming for Latino youth in after-school, non-formal settings; the creation of opportunities for civic engagement; and, the promotion of Latino leadership around environmental issues.

The Santa Barbara County 4-H Youth Development Program has sustained Agua Pura. It is assisting Santa Barbara County Water Agency in meeting best practices under NPDES (National Pollution Discharge Elimination System), (E.P.A. 2003) guidelines. Agua Pura has contributed to engaging the Latino community in watershed resource issues and continues to do so. Recently, the program embarked on a partnership with the nationally known Adopt-A-Watershed Agua Program to develop and extend a place-based curriculum dealing with salmon and steelhead known as the Agua Pura Pescadores (Fisher-folk) Project.

This paper describes the Agua Pura and the Los Pescadores Program and the rationale for starting such a program, and considers the theoretical groundings that influenced the approach this program has attempted to follow. Finally, it outlines what has been learned from the experience, and how that experience reflects what the research literature says should happen.

## Why Agua Pura?

Responding to the need for programs that engage Latinos in environmental issues, Agua Pura (Pure Water) began in 1999 as a partnership of the University of Wisconsin Cooperative Extension's, "*Give Water A Hand*," Santa Barbara County UCCE 4-H Youth Development Program and Santa Barbara City College. The program's overall goal was

to better understand how community educators and youth leaders could involve Latino youth and the Latino community in watershed protection. The effort has included drawing on the experience and expertise of Latino adults and youth, including their participation, adaptation and creation of strategies, utilizing their resources to meet the Latino community's needs and interests related to watersheds (Andrews & Marzolla, 2000).

Agua Pura has responded to a variety of concerns, opportunities, issues and interests. These included:

- The need for environmental educators to respond to major demographic shifts in the ethnic, (particularly the increase of Latino) makeup of the state and nation's population;
- The lack of civic engagement of many California residents, particularly Latinos, in having a voice in their community as well as in the wider state and national civic arenas;
- The need for community-based, place-based, non-formal after-school science and environmental literacy programs that engage Latino youth and their families (Ponzio & Marzolla, 2002);
- The need to re-orient environmental education at all levels, ensuring that the program would contribute to personal and community capacity building, and address issues of environmental justice and systematically address the lack of diversity (Grass & Agyeman, 2002); and,
- The desire to create a program that would integrate “culturally sensitive research approaches” that would be inherent in Agua Pura as an environmental education program (Agyeman, 2003).

In the remainder of this document I will elaborate on these points, touching on the theoretical reasons for this program's approach. I will also address what current research indicates and how that experience reflects what the research literature dictates. Finally, I will consider the lessons learned from the experience of implementing this program and how that experience reflects what the research literature says should happen.

## **Shifting Demographics and Latino Engagement in Environmental Issues**

The increase in the Latino population in California is the most obvious indicator of the need for programs like Agua Pura. A visit to almost any school in California indicates that the demographic composition of the student population is more diverse than at any

time in the state's history. Examine the state's California Basic Educational Data System (CBEDS, 2004), data and the results of the 2000 national census. The data will confirm what your eyes tell you: There is no majority ethnic group; the shift in the nation's population from a European-American majority to a more diverse society that demographers heralded for many years has arrived. According to the 2000 U.S. Census, California's population is 32.4% Latino (US Census, 2000). According to the State Department of Education's 2002-2003 state enrollment data, 45.2% of the statewide student population is identified as Latino: That is 2,819,504 of a total student population of 6,244,403 students. Santa Barbara County's population is 34.2% Latino. The school-age population is an even stronger indication of this population shift as Latino students now make up the majority of the student population: Santa Barbara County's school population is 53.1% Latino (CBEDS, 2004).

Researchers who have surveyed Latino communities have found that the majority of recent Latino immigrants are more concerned about environmental issues than the dominant culture. The research also showed that the respondents felt that environmental issues can best be addressed by community involvement (Schultz & Unipan, 2000). In spite of this reported interest and concern, very few Latino young people have been observed taking part in environmental clubs or environment-related community activities. Likewise, concern has been expressed nationally by the lack of Latino university graduates with degrees in science and environment related fields. Likewise, a visit to an after-school environmental club and/or a public event that feature environmental issues, such as Earth Day in Santa Barbara Counties, will indicate that Latinos are generally not involved. It is safe to assume that the same can be said for most communities throughout the United States. Likewise, there are very few Latino professionals in environmental leadership positions in California, or the rest of the United States. In addition, there are very few Latino students enrolled in college level environmental science or education programs. For example, at UC Santa Barbara, the Environmental Studies degree program has an estimated enrollment of four hundred undergraduates. It was also estimated that only twelve percent of these students are Latino. (This estimate is based on a conversation that I had with the program's administrator who indicated that the program did not record the ethnicity of the students enrolled in the program).

## **Water Quality and Latino Community Engagement**

Latino members of our communities are often most affected by water-related health risks. Additionally, quality of life issues and personal or community barriers may limit their involvement in local water quality protection activities. In Santa Barbara, the area of the highest Latino population density is also where the creeks are the dirtiest from upstream sources. These polluted creeks drain into the ocean along Santa Barbara's shoreline, forcing beach closures that impact everyone. Like everyone else, many of the Latino community go to the beach. Their children play in the creeks. They are definitely interested in the problem. However, because of language and cultural issues, community members are often not engaged in water protection activities. In most cases, people in

charge of outreach are not Latino and do not speak Spanish and they have little or no experience working with Latinos. Therefore, it is not surprising that water quality education programs often overlook the Latino community (Andrews & Marzolla, 2000).

The Agua Pura program was developed to address this issue in Santa Barbara County. The program represents a community-based watershed education program focused on engaging Latino youth and their families in local watershed/water quality issues. Supported in part by funds from the Santa Barbara County Water Agency, Agua Pura's efforts have helped the agency meet its National Pollutant Discharge Elimination System (NPDES) requirements for best education practices. These requirements include educational outreach to underserved communities (EPA, 2003), using educational approaches that are community-centered draws on established, research-based practices. Sources for community-based research and theory that have helped guide Agua Pura staff and develop program strategy are discussed later in this paper.

## **The Unique Opportunities in Community and Place-Based Programs**

If one follows a constructivist educational model that views direct experience being antecedent to learning, the case is made for direct experiences in science. It follows that participants would then work on authentic tasks and projects using their newly acquired skills in new ways (Ponzio & Marzolla, 2002). This paradigm fits well with proven pedagogical practices, such as the learning cycle (Guzzetti, 1992 and Lawson, 1989), and cooperative learning strategies (Covington, 1992 and Slavin, 1983) that have been found effective in science instruction and fit current brain development models (Brooks & Brooks, 1993; Caine & Caine, 1991; Sylwester, 1995). Community-based science programs also allow participants to apply their learning to a wide variety of home, neighborhood, and community situations in settings such as helping to design and implement recycling programs, raising vegetables in community gardens for senior citizens centers, or helping design family disaster-emergency response plans. These kinds of projects encourage youth to solve problems grounded in real-world contexts requiring many kinds of complex problem solving skills suggested by advocates of "outcome-based" education (Spady, 1994). Although the diversity of projects and outcomes poses a major challenge to evaluation, it helps keep participants engaged in service learning applications of their science knowledge. The project-based outcomes also help forge a connection between "school smarts" and "street smarts" and encourage career exploration by engaging scientific thinking and problem solving skills learned and applied in community issues that are significant to the learners.

Developing educational programs based on a local context is also strongly favored by advocates of place-based education. In a recent article, Gruenewald states:

“Place-based pedagogies are needed so that the education of citizens might have some direct bearing on the well-being of the social and ecological places people actually inhabit. Critical pedagogies are needed to challenge the assumptions, practices, and outcomes taken for granted in dominant culture and in conventional education.” (Gruenewald 2003)

Gruenewald goes on to provide a theoretical context for this approach:

“...place-based education lacks a specific theoretical tradition, though this is partly a matter of naming. Its practices and purposes can be connected to experiential learning, contextual learning, problem-based learning, constructivism, outdoor education, indigenous education, environmental and ecological education, bioregional education, democratic education, multicultural education, community-based education, critical pedagogy itself, as well as other approaches that are concerned with context and the value of learning from and nurturing specific places, communities, or regions.” (Gruenewald 2003)

Creating a place-based watershed education program at the community level can have additional benefits by creating a process that can, over time, lead to civic engagement and help overcome the exclusion of Latinos (and hopefully other under-represented ethnic groups) in the decision-making processes. Research literature that focuses on civic engagement has served to inform the Agua Pura staff in its program efforts. For instance, the California-based Civic Engagement Project (CEP) defines civic engagement as:

“...the inclusion and meaningful participation of community members in the process of deliberation, prioritization and decision-making regarding public programs, services, projects or policy-making.”

CEP goes on to identify the benefits of this approach to communities and individuals:

“A civic engagement approach to policy-making mandates that the community be considered when policy decisions are made.” Successful civic engagement can contribute to the improvement in the quality of life of the participants, their families and neighbors.” (CEP, 2003; Rodriguez de la Mar, 2003)

Programs like Agua Pura can serve as civic engagement learning opportunities for young Latinos and their families. The program has introduced these community members to water quality resource issues where they have learned to identify and frame issues based on their personal perspective and the needs of their community. It is reasonable to expect that this process will help develop future community leaders and spokespeople.

## ***Community-Based Programs and Science and Environmental Literacy***

It is generally recognized that there is a demand for technological and scientific literacy. People are being asked to pass judgment on issues such as offshore oil drilling, the fate of endangered species, and the commercial uses of genetic engineering. Employers and employees alike are faced with choices that may affect the well being of the environment. A report from the United States Department of Education stated that US students scored below the international average on the science portion of the general knowledge assessment and were among the lowest of the 21 countries who participated in the TIMMS testing (National Center for Educational Statistics [NCES]. 1998). It is increasingly clear that schools cannot do it alone, and therefore one must ask “what is this lack of scientific understanding costing us and our children’s ability to understand their natural world?” How can we apply research findings and best practices to increase scientific literacy and environmental awareness for all of our youth?

### ***Why After-School Hours?***

When school lets out for the day, many children need after-school care while their parents finish work. These children constitute a vulnerable and needy group for continued supervision. It has been calculated that the average expense a year of after-school childcare averages the same cost as a year of tuition at the University of California. Even with such a high cost, five times as many California children need childcare than there are available spaces. (California Child Care Resource and Referral Network, 2001). There are, in many schools and at many community-based youth centers, on site after-school childcare and youth centered programs. Most of these programs have child safety and custodial care as a primary focus. Certain of these programs are low or no cost to participants. Many provide supervised after-school, weekend and summer youth activities for children and young people. Likewise, many of these programs are reaching Latino youth. Finally, these after-school settings can serve as ideal venues for engaging young people in watershed education. Unlike most formal school settings, after-school settings are generally more flexible, allowing more opportunities for field discovery and community engagement.

### ***Agua Pura***

Working in after-school settings, Agua Pura is an example of a community-based, after-school watershed education program. The Santa Barbara County 4-H Youth Development Program has sustained Agua Pura. It is assisting the county in meeting best practices under NPDES (National Pollution Discharge Elimination System) guidelines. Agua Pura has significantly contributed to engaging the Latino community in watershed resource issues in the following ways:

- A six-week, hands-on after-school watershed education program that has graduated over 560 Latino children.

- Incorporation of watershed education into a nine-week summer day camp for over 1,200 Latino children.
- The local Housing Authority, whose leadership is primarily Latino, has collaborated with the 4-H program in the development and delivery of the ongoing "Splash to Trash" watershed education program. Sixty-two young Latino people from public housing have graduated from the program.
- Publication of the Agua Pura Leadership Institute Planning Manual has created opportunities for Latino leadership development involving watershed resource issues at national conferences and in professional journal articles. (Marzolla, 2003)

Working in partnership with Adopt-A-Watershed, a California-based, nationally recognized watershed education program Agua Pura is developing "Los Pescadores," a Latino youth component, to address watershed issues related to the threatened salmon and steelhead. This project is building on the experience that has been gained over the years from the implementation of the Agua Pura program in Latino communities. The curriculum will incorporate experiential, place-based curriculum that will enhance the participant's understanding of this topic, engage them in their own surroundings, as well as encourage their active leadership in addressing related issues in their community. Finally, this project will be directed toward engaging youth from under-served communities, concentrating on engaging Latino youth and families. The curriculum is being developed for 10-15 year-old youth participating in nonformal and formal education programs. These include after-school programs, including camps, education centers, museums, and youth programs, as well as programs for educators willing to implement Place-Based Learning programs in formal education.

The importance of Latino community input into the program design and delivery was a significant lesson learned from the Agua Pura experience (Andrews & Marzolla, 2000). The Los Pescadores Salmon and Steelhead curriculum is being developed with input from representatives of the Latino community that are serving on the curriculum design committee. Their suggestions have included the collection of local salmon and steelhead stories and lore from community elders and sharing these stories at community celebrations. They have also stressed the importance for including families in the sharing of food and cultural celebrations in the curriculum activities. These ideas and suggestions have been incorporated into the curriculum outline. The Pescadores curriculum will incorporate proven instructional methods that include:

- Project-based and place-based instruction that draws on authentic issues, and the tasks will be intrinsically interesting to the participants and will relate to the real world;
- Hands-on learning in non-formal settings;
- A high probability that the students will be recognized for their work by their community; and

- Cross-age teaching, incorporating teens and college students as project leaders and instructors (Ponzio & Fisher, 1998).

Sample topics that have been included in the curriculum outline include: Community mapping, exploring the life cycle of salmon and steelhead, monitoring salmon and steelhead, developing and designing a restoration project. Participants will create individual journals, and they will record their project with photographs, artwork, stories and poetry as well as with data collection. They will share their experiences with their families and community with a celebration that they design and organize. It is intended that these activities will contribute to individual and group project portfolios that will serve as evidence of the project's outcome, and as a record of the individual's contribution.

When completed, it is expected that the curriculum will be distributed by the UC 4-H Youth Development Program and by Adopt-A-Watershed. It is planned that the curriculum will be available in print and on-line. It is also expected that training will be provided to educators and project leaders by both UC and AAW. When completed, this curriculum is intended to serve as a valuable resource to west coast educators from Mexico to Alaska.

## Conclusion

The Agua Pura program has provided several valuable lessons that may be of use to agencies and individuals interested in developing water quality education programs that engage the growing Latino population. Likewise, these experiences may be transferable to settings involving other under-served populations. Based on the experience designing and implementing the Agua Pura program as well as a review of the related research, the following lessons stand out:

- Effective programs are community-based, build local leadership, address local issues that impact community members;
- Water quality issues are addressed collaboratively with the community and the issues are addressed in a context that community-members identify;
- Educational programs are culturally appropriate, experiential, place-based and they are implemented in after-school settings;
- Programs develop and foster local leadership and provide opportunities for civic engagement; and
- The need to emphasize the importance of hiring a bi-lingual culturally competent staff as well as encouraging the involvement of Latino teens by providing them with leadership opportunities through internships and, whenever possible, paid positions.

In reviewing the current research, there is no doubt a critical need for more applied research in the field of community-based and environmental education as it applies with

working with culturally diverse populations. There is also a growing need to extend this research to agencies and educators whose tasks include working with diverse communities. Hopefully we can look forward to a time when culturally sensitive approaches to these programs will become inherent in environmental education research (Agyeman, 2003).

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