COMMUNITY ORGANIZING FOR WATERSHED RESTORATION:

The Cotati Creek Critters Outreach Program

by

Jenny Blaker

A project submitted to
Sonoma State University

in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

in

Interdisciplinary Studies : Conservation Psychology

May 2006

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Date

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ABSTRACT

The Cotati Creek Critters is a watershed group conducting a habitat restoration project along the Laguna de Santa Rosa in Cotati. In June 2005 the group was awarded an Urban Stream Restoration grant from the California Department of Water Resources to involve the local community in planting 2,000 native trees and shrubs along the Laguna de Santa Rosa in Cotati over a two year period. The purpose of the Outreach Program is to recruit volunteers for the planting project and to foster a sense of stewardship in the local community by raising awareness of related issues in the Cotati area. This project embodies the intent of Conservation Psychology to understand and encourage behavior that promotes environmental sustainability.

A schedule of presentations was organized for a range of community groups and schools. Community Planting Days were organized for members of the local community with special workdays for specific groups. A questionnaire was circulated among volunteers to evaluate the Outreach Program and discover what participants value most about their experience with the Cotati Creek Critters, in order to continue to engage them and build on the positive support received so far. This paper links these findings to the field of Conservation Psychology.

Responses to the Outreach Program and to the survey indicate considerable local support for a project which is seen to be having tangible beneficial effects for the local environment and for building community at a local level.

Chair: _____
Signature

MA Program: Action for a Viable Future
Sonoma State University Date:_____

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PART I PROGRAM: CONSERVATION PSYCHOLOGY

The planet is going through a time of unprecedented ecological change, leading to a critical loss of biodiversity. Much of this loss is the result of human actions, based on the view of the Earth as a commodity, a limitless set of resources available for human consumption, which at the same time is a limitless sink for waste products which can be thrown away. This paradigm is wearing thin, with the dawning realization that our way of life is no longer sustainable on a finite planet.

The way we think about the Earth fundamentally affects our behavior towards it. To make a transition towards a more sustainable way of life means changing our behavior, which is based on values, beliefs, attitudes, and our sense of connection, or lack of connection, to the Earth and one another. People can identify more easily with a particular place rather than with generic global issues. At the same time, everywhere is local to someone, and action at the local level is essential. I am interested in helping to foster ecological stewardship and develop a sense of place at the local community level.

In attempting to define my program, I explored concepts such as “Spiritual Activism,” “Human Ecology,” “Applied Spirituality,” and “Spiritual Ecology.” I discovered that there is an emerging field of study, focusing on the nexus between values, beliefs, attitudes and behavior in relation to the natural world, with the goal of inspiring action for the Earth. It is called “Conservation Psychology.” This frame fits the concepts I am grappling with.

LITERATURE REVIEW

Over the last decade or so, a growing number of people have been studying the connections between psychology and environmental issues. Conservation Psychology

(CP), which has grown out of the ensuing discussions, seeks to understand human behavior in relation to the environment, and how to encourage behavior that promotes sustainability (Clayton & Brook, 2005; Saunders, 2003). As an emerging field of study, its website is still under construction (www.conservationpsychology.org).

Beginning in 2000, Dr. Carol Saunders, of Brookfield Zoo in Illinois, and Dr. Gene Myers, of Western Washington University, initiated a series of discussions relating to how and why people care for the natural world (Brook, 2001; Saunders & Myers, 2003). Despite the increasing number of people studying "the connections between psychology and conservation issues, and more specifically how to influence human behavior to protect the environment," there was no "cohesive community, nor a clear profession conservation-oriented identity. Many people expressed the desire to have a clear identity for this sort of value-driven research" (Brook, 2001).

In May 2002, at the first international Conservation Psychology conference, leaders from disciplines including psychology, sociology, philosophy, environmental education, and conservation biology focused on four themes: people's connections to animals; connections to place; encouraging environmentally-friendly behavior; and values related to the environment. In Winter 2003, a special Conservation Psychology issue of *Human Ecology Review*, the journal of the Society for Human Ecology, was published (Saunders & Myers, 2003).

A new name, distinct from Environmental Psychology or Ecopsychology, was seen as offering "a channel for new energy" (Myers, 2001). Unlike Environmental Psychology, which includes human-built environments, CP focuses on the natural environment and is value-driven, promoting sustainable behavior. Ecopsychology was

thought by some to be carrying too much unscientific “baggage” (Brook, 2001). From my own studies, I would suggest that Ecopsychology is a broader subject, covering the spectrum of human relationships with the natural world, from intensely personal relationships with nature in the shamanistic traditions and “the wilderness experience,” to the psychological impacts of dislocation brought about by the processes of industrialization and globalization, such as “nature deficit disorder,” and the psychological impacts of extinction of species, “environmental grief” (Louv, 2005; Barrows, 1998; Roszak,1995; Gomes, 2005).

Conservation psychology, modeled after conservation biology, is value-driven, invites multidisciplinary participation, and focuses on solving problems on-the-ground (Saunders & Myers, 2001). “It may be most useful to think of conservation psychology as a field of study focused on a common problem area, in contrast to environmental psychology, which is a subdiscipline of psychology” (Clayton & Brook, 2005).

Conservation biologists rely on partners from a wide range of disciplines to solve common problems. “A dynamic partnership between conservation biology and the social sciences will be critical for more sustainable relationships between people and the rest of nature in the future” (Saunders, Brook & Myers, 2006). The need for this collaborative approach is clearly reflected in the Cotati Creek Critters ecological restoration project outlined in this paper, which involves players from state and local government agencies, from biologists to engineers, politicians and policy makers, a local non-profit organization, and grassroots citizen volunteers. Similarly, conservation psychology is “less of a specialty area within psychology than a hub for conservation collaboration, research and outreach” (Chamberlain, J. 2005).

Conservation psychology has not yet been taken very seriously in mainstream psychology, where “protecting the environment is not widely seen by many psychologists as a focus of professional interest”; and “environmental professionals do not tend to see psychology as relevant to an understanding of the environment” (Clayton & Brook, 2005). Clayton and Brooks argue, and I would agree, that the psychological understanding of human behavior is vital: “Environmental problems are the function of human behaviors, and human behavioral changes will be necessary in order to address them. Psychology not only is relevant to conservation initiatives, but is among the most relevant disciplines as the one most devoted to the study of human behavior ...” (Clayton & Brook, 2005). Psychology can explore vital questions: What is important to humans and why? Why do people not always act in accordance with their stated beliefs? What part does identification with particular groups play? CP looks at motives such as self-image, a sense of belonging, a sense of control, and how these affect human behavior in relation to the environment, for example, how people keep their gardens, or what kind of cars they buy (Brooks & Clayton, 2005). There is an effort from within Conservation Psychology to “green” psychology. “Research is needed about the causes of value development and changes, and the overall relationship between values and behavior” (Saunders, Brook & Myers, 2006).

Conservation Psychology is therefore both an emerging strand within the discipline of psychology, and a separate field of study inviting collaboration from researchers and practitioners from other areas. “The name… will always be used in two senses, as an inclusive descriptor of an interdisciplinary space occupied by many players

interested in individual and societal transactions and reciprocal interests with the natural environment, and as an important domain within psychology" (Reser, 2001).

The Cotati Creek Critters Outreach Program is an embodiment of this new field. Taking as a starting point a practical project with a local focus on ecological restoration, it requires a collaborative approach. It seeks to understand what motivates people to participate in such a project and how to engage people and encourage and inspire action. In seeking to increase awareness of the environment in the local community and to develop a sense of place, it has wider implications for raising public awareness, community building, and hopefully changing behavior, in relation to a range of local environmental concerns.

PART II PROJECT: COTATI CREEK CRITTERS OUTREACH PROGRAM

Cotati Creek Critters (CCC) is a grassroots citizens' group which has been planting native trees and removing invasive plants along the Laguna de Santa Rosa in Cotati since 1999. In 2005, we successfully applied for an Urban Stream Restoration grant from the California Department of Water Resources (DWR). The primary goal of the grant-funded project is to involve the local community in planting 2,000 native trees and shrubs along a 1-mile section of the Laguna de Santa Rosa channel in Cotati, over a 2-year period.

I have been involved with Cotati Creek Critters since its inception. I took a lead on writing the grant proposal, which was a collaborative effort (see Appendix A). My colleague Wade Belew is the Stewardship Coordinator, with responsibility for all aspects of the hands-on restoration project. As Outreach Coordinator, I have been primarily responsible for efforts to involve the local community by recruiting volunteers and raising awareness of creek-related issues in the local community.

In March 2006 I circulated a questionnaire to participants in the CCC project (Appendix B). In this paper, and referring to the questionnaire results, I will evaluate the Outreach Program in the context of the CCC project as a whole. Ideally the CCC project will serve as a model for other watershed groups wishing to set up similar restoration projects in the future.

GEOGRAPHICAL AND HISTORICAL CONTEXT FOR THE PROJECT

The Laguna de Santa Rosa

The Laguna de Santa Rosa is the largest freshwater wetland complex on the north coast of California. It is also the largest tributary to the Russian River. Its 14-mile

channel runs northwest from Cotati/Rohnert Park to the Russian River near Forestville, draining an area of 250 square miles. This area contains a wide variety of natural habitat, including oak woodlands and grasslands, wetlands and vernal pools, streams and creeks (see Figure 1).

For thousands of years, the abundant resources of the area supported one of the largest populations of Native Americans in North America. They lived mainly along the shores of lakes and marshes and along rivers and creeks. Bears, elk, and pronghorn antelope roamed the land, the sky was thick with ducks and geese, rivers flowed with salmon and other fish, and shellfish and mussels were abundant. Plants provided food, fiber, and medicines, and acorns were a staple food. The Native Americans lived in a reciprocal relationship with the land, practicing a range of management techniques including fire, pruning, and selective harvesting.

The first record of European contact with the Coast Miwok came in 1579 with the arrival of Sir Francis Drake, who named the land New Albion and claimed it for England. In 1812 the Russians established a colony at Fort Ross; in response, the Mexicans established missions at San Rafael and Sonoma. Diseases spread rapidly, over 90% of the Native Americans died, and those that remained were forced to work as slaves in the missions. In 1834 General Mariano Guadalupe Vallejo established the Rancho Petaluma which, with over 60,000 head of cattle, and sheep and horses, became a center for the processing of agricultural goods, including hides, which were shipped down the Petaluma River for export. In 1844, the 17,238 acre Rancho Cotate was granted to Juan Castenada. It changed hands twice more before being sold to Dr Thomas Page, whose family eventually subdivided the land and, in 1892, established the city of Cotati. The city was

built close to Page's station, a wood and water stop along the railroad, which was constructed in 1870.

The landscape was radically altered by the cattle, which wiped out much of the native grassland, and by the introduction of many new plant species. After the Gold Rush, the city of Petaluma, founded as a duck-hunting post in 1852, became a thriving center for trade in the grain, hay, and later, fruit, that grew around the Cotati valley. Later it advertised itself as the egg capital of the world. These agricultural products were transported, initially by ox cart, later by rail and ship, down the Petaluma River, to the bustling city of San Francisco.

Much of the marshland was drained for the construction of roads, for the railroad, for agriculture, and for urban development. Many of the creeks and streams were channelized, straightened to direct the rainwater off the land as fast as possible, and sometimes even lined with concrete. The accumulated changes have resulted in many problems in the Laguna watershed, including erosion and sedimentation, loss of wildlife habitat, invasive species, and water pollution.

The Cotati area can be described as the "headwaters" of the Laguna, in that it lies at the southeastern extremity of the watershed, from where water flows northwest to the main Laguna floodplain and the Russian River. The 3-mile reach that flows through the City of Cotati is the most urbanized section of the main channel. The bike path alongside the creek is well used by walkers and bicyclists, much of the adjacent land is residential, and four city parks adjoin the creek.

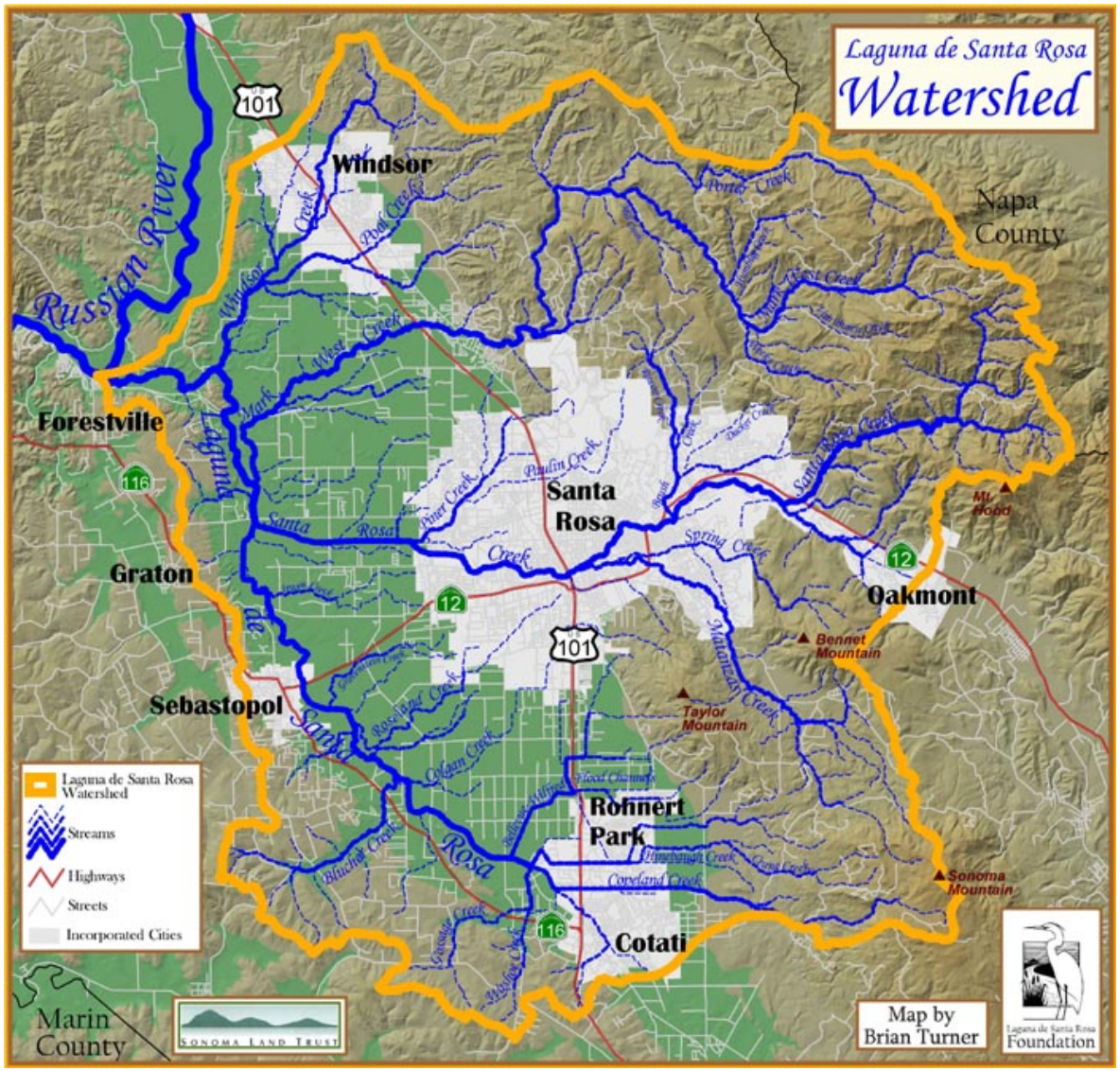


Figure 1. Map of the Laguna de Santa Rosa watershed, retrieved from Laguna de Santa Rosa Foundation website, http://www.lagunadesantarosa.org/laguna_maps.html

The Laguna de Santa Rosa Foundation

The first study of the Laguna de Santa Rosa was completed by Sonoma State University students in 1977. In 1989 there was enough interest to hold a State of the Laguna Conference, which led to the formation of the Laguna de Santa Rosa Foundation, a non-profit organization whose mission is "to preserve, restore and enhance the Laguna de Santa Rosa, the largest tributary of the Russian River and Sonoma County's richest wildlife area, and to inspire greater public appreciation and enjoyment of the Laguna's treasures." In 1990 Congressman Doug Boscoe proposed legislation to create a Laguna de Santa Rosa National Wildlife Refuge. Although his attempt failed, it brought to the public's attention that the Laguna, often previously regarded as a swamp, could be considered a national treasure. In 1995 the Foundation initiated *the Laguna de Santa Rosa Coordinated Resource Management Plan*, bringing together a task force of private organizations and public agencies to identify and adopt general objectives and management guidelines within a 21,000-acre Core Planning area. Cotati and Rohnert Park were not included in this area.

Since 2002, the Laguna Foundation has grown rapidly, with a dedicated Board of Directors and sufficient funding to support an office, and a staff of ten. Foundation staff is currently working on a Restoration and Management Plan to prioritize restoration activities for the entire Laguna watershed, including the section that runs through Cotati and Rohnert Park. The organization has ambitious plans to construct an interpretive center reflecting the natural and cultural history of the area.

Cotati Creek Critters: background and history

In 1999 the City of Cotati completed a section of bike path alongside the Laguna channel, and constructed a pedestrian bridge across it. In the process, the adjacent land was bulldozed and laid bare of vegetation. A small group of friends and neighbors, including two members of Cotati's Community and Environment Commission (CEC), obtained the permission of the City of Cotati and the Sonoma County Water Agency (SCWA) to plant native trees and shrubs alongside the completed bike path.

Over the next few years, the group, which became known as the Cotati Creek Critters, held a regular planting day on the second Saturday of every month from October until April. We worked at the original site, north of East Cotati Avenue; in Delano Park along Cotati Creek; and along the Laguna in Helen Putnam Park, off Myrtle Avenue.

In Fall 2003, as a project for a class on *Watershed Ecology and Restoration* at the Santa Rosa Junior College, Wade Belew and I completed a study of the 3 miles of the Laguna which run through Cotati, and compiled a *Baseline Assessment and Habitat Enhancement Feasibility Study of the Laguna de Santa Rosa in Cotati*, with maps, photographs, creek profiles and a vegetation survey. The purpose was to record existing conditions, and explore the feasibility of potential future restoration projects. Although many studies of the Laguna de Santa Rosa had been completed in the past three decades, not one of them included the section east of the Cotati/Rohnert Park city limits. We wanted to fill this information gap, as we felt that this section had great potential for habitat restoration, as well as for recreational use, and that any improvements in this section would have beneficial effects, not only in Cotati itself but also downstream, in the

rest of the Laguna. The *Baseline Assessment* was a first step towards creating a viable restoration plan.

In 2004 the Cotati Creek Critters defined its mission, to:

- Enhance habitat for native species;
- Organize community workdays to plant native trees and to remove invasive species;
- Encourage an appreciation of Cotati's creeks and creekside (*riparian*) vegetation;
- Raise awareness that Cotati's creeks are part of the larger Laguna de Santa Rosa and Russian River watersheds;
- Enjoy this beautiful natural resource with our families, neighbors and the community.

Urban Stream Restoration Grant, 2005

> The objectives of the Urban Streams Restoration Program are to assist communities in reducing damages from stream bank and watershed instability and floods while restoring the environmental and aesthetic values of streams, and to encourage stewardship and maintenance of streams by the community. (California Department of Water Resources).

In January 2005, Cotati Creek Critters was encouraged to apply for an Urban Stream Restoration grant from the California Department of Water Resources (DWR) (see Appendix A). The application required an agency sponsor and a non-profit sponsor. Sonoma County Water Agency (SCWA) and the Laguna Foundation, respectively, agreed to fulfill these roles. Representatives of SCWA, the Laguna Foundation, and Cotati's Community & Environment Commission contributed valuable information and expertise. The City of Cotati and representatives of the local community provided letters of support. In June 2005 we learned that our application had been successful, in the

amount of $169,606. Our project was 1 of 17 successful proposals, out of a total of 91 applicants, and 1 of 10 to be fully funded.

PURPOSE OF THE PROJECT

The primary purpose of Cotati Creek Critters 2-year grant-funded project is to involve the local community in planting 2,000 native trees and shrubs along a 1-mile reach of the Laguna de Santa Rosa that runs through Cotati. The goals of the restoration project are:

- To maintain flood control. The trees will eventually form a canopy which will shade out vegetation currently growing in and choking the channel;
- To prevent soil erosion and stabilize banks;
- To encourage native vegetation and enhance habitat for native birds, animals and insects, while managing invasive plants;
- By creating a tree canopy to shade the water, to lower water temperatures. This is beneficial for aquatic life, including salmonids further downstream in the system;
- To create an urban greenway along the creek and the bike path, providing recreational and educational opportunities for local residents and visitors.

(See Appendix A.)

The Outreach Program includes all aspects of outreach to the local community and has two main objectives:

- To recruit volunteers for the planting project;
- To foster a sense of stewardship in the local community by raising awareness of creek-related issues in the Cotati area.

In February and March 2006, I circulated a questionnaire to participants, to evaluate the Outreach Program and to explore people's motivations for involvement (Appendix B).

THE OUTREACH PROGRAM: METHODOLOGY

Restoration project launch

In June 2005, when we learned that the Cotati Creek Critters application for an Urban Stream Restoration grant had been successful, we began to lay the groundwork to establish both the restoration project and the outreach program. The Stewardship Coordinator worked with the City of Cotati to establish a base of operations at a city well lot, now known as "Ladybug Lot." The Lot is ideally situated, in a highly visible location on a well-used path along the Laguna, adjacent to Ladybug Park, at the border of the cities of Cotati and Rohnert Park (Figure 2). On September 17, 2005, we held a Grand Opening Celebration to launch the project. Emphasizing the collaborative nature of the project, representatives of the Laguna Foundation, the City of Cotati, the City of Rohnert Park, and SCWA, spoke about their hopes for and support of the project. Volunteers spent most of the morning pruning, mulching, and generally preparing Ladybug Lot as the future base of operations. It now houses a shipping container to store tools, equipment, and supplies, and a thriving native plant nursery, which will also serve as a demonstration native plant garden.

Establishing the Outreach Program

(1) Logo: the Western Pond Turtle

To begin an effective outreach program, we first needed to create a recognizable identity, and began by creating a logo, letterhead, and business cards. Cotati Creek

Critters' logo, designed by Anna Edmondson and edited by professional artist Alyson Butler, is the western pond turtle, the only indigenous turtle in California, which is considered a Species of Special Concern by the California Department of Fish & Game.

Using "charismatic megafauna" as target species for ecological restoration projects can help to generate public support. Many stream restoration projects in California are focused on the recovery of salmon, but the Laguna channel in Cotati does not support fish year-round, because the water flows are inconsistent and dry up almost entirely in the summer. Western pond turtles have been sighted in the Laguna channel in Cotati over the last few years, and sightings were more frequent a decade ago. CCC had previously discussed the possibility of adopting the western pond turtle as our "totem" animal or target species.

In April 2005, Wade Belew and I attended a Western Pond Turtle Workshop, run by the Wildlife Society, at Sonoma State University. The event confirmed our feelings that there is potential to enhance habitat for the western pond turtle here in Cotati. Work in the channel itself, introducing rocks for turtles to bask on, and possibly altering the depths of the channel, goes beyond the scope of the current Department of Water Resources grant and would require permits from federal agencies which will take time to obtain. A first step would be a scientific survey to assess current populations. In the meantime, we adopted the turtle as our logo, and used the drawing to create business cards and letterhead (see Figure 3).

(2) Publicity & Media Outreach

To advertise events during the fall and winter of 2005, I used an existing volunteer e-mail list, website www.CotatiCreekCritters.info, now managed by volunteer

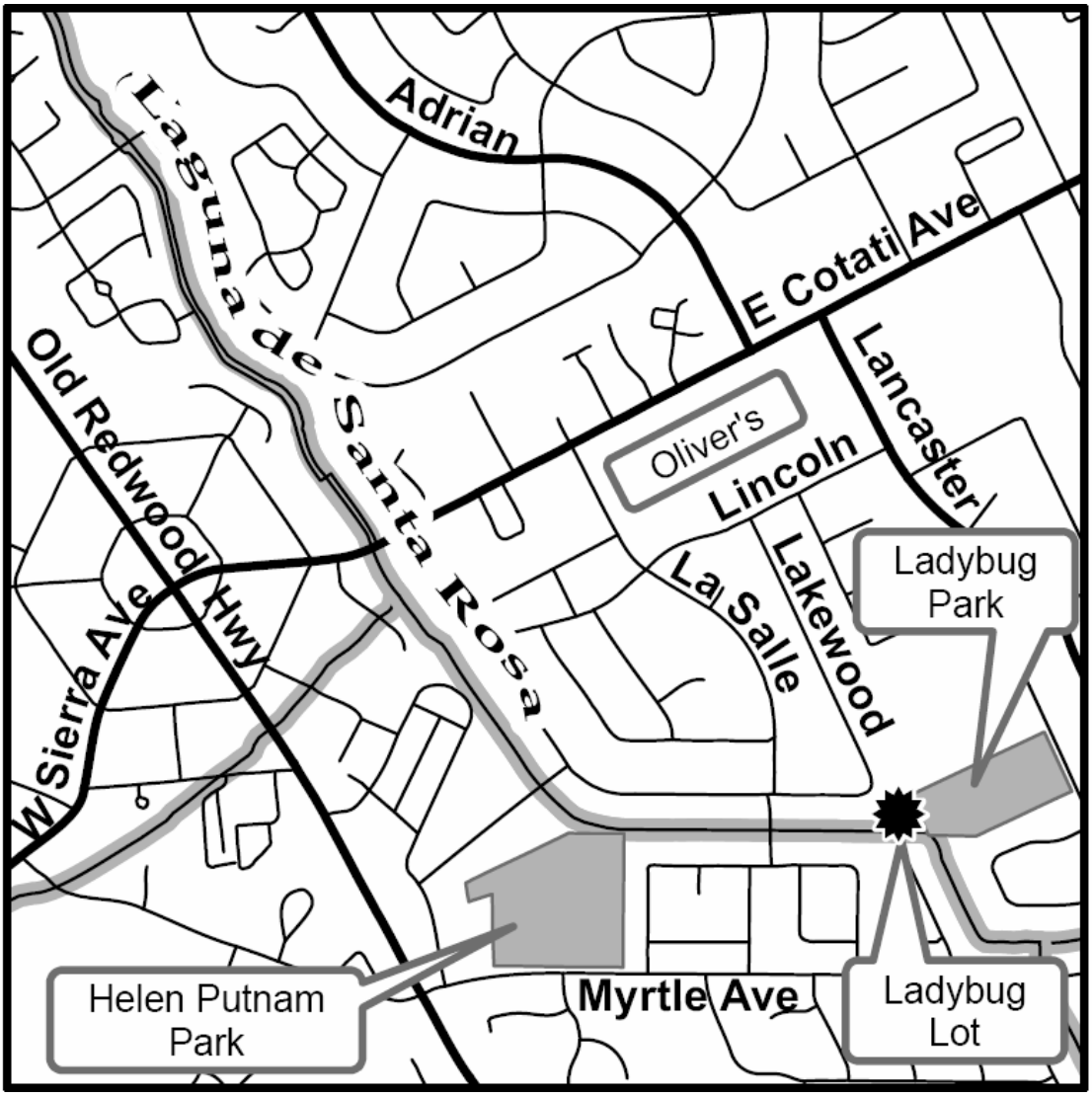
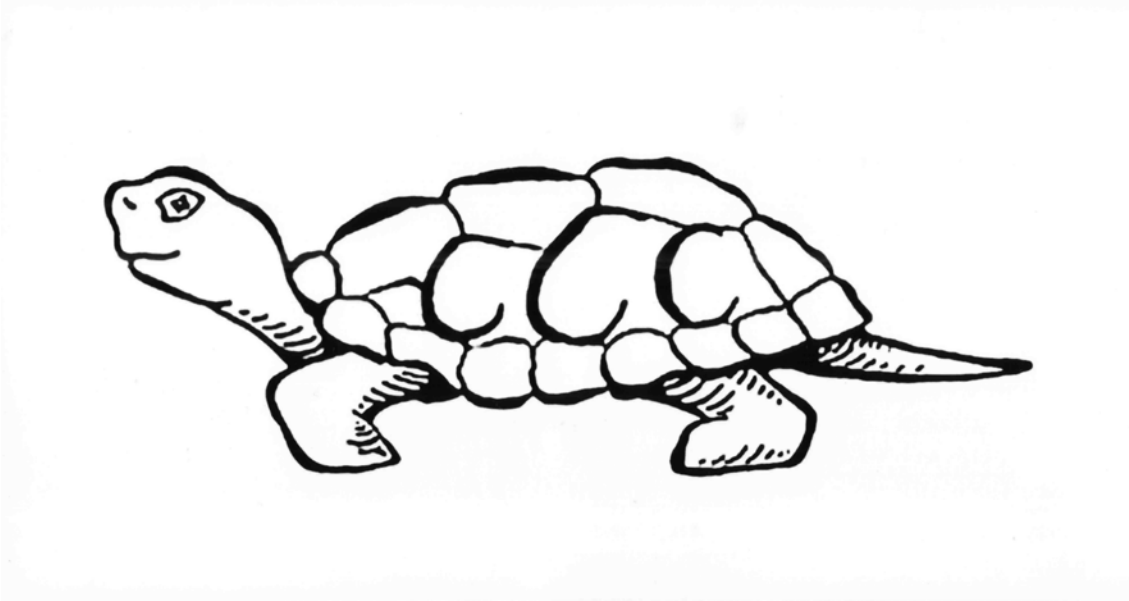


Figure 2. Location of "Ladybug Lot" in relation to Laguna de Santa Rosa in Cotati. Map provided by the Laguna de Santa Rosa Foundation.

Figure 3: Western Pond Turtle - Cotati Creek Critters logo.
With thanks to Anna Edmondson and Alyson Butler for art work.



Ann Leonard, and local e-mail groups. We continued to advertise, as previously, through the City of Cotati's bulletin board and events hotline. The City arranged for us to have a flyer inserted into every water bill to every household in the City, and the Recreation Department included announcements and an article in their new 6-monthly *Community Recreation Guide*. We distributed flyers around Cotati and the Sonoma State University campus and submitted press releases to the local newspaper. The Stewardship Coordinator hosts a local radio program and took the opportunity to announce events. Longer articles about some of our events and related issues have since been published in local newspapers and newsletters (see Appendix C for further details). There is potential to expand the scope of outreach through the local media in the future.

(3) Presentations

We compiled a PowerPoint presentation, later adapted for use with different groups, including schools, to outline the historical, geographical and biological context and purpose of the CCC restoration project. During fall 2005, I wrote to approximately 25 groups, inviting them to schedule a presentation, sign up for a workday, and/or consider adopting a section of the creek for long-term care and maintenance. Initially I built on existing connections, approaching those who had supported our grant application; then approached other groups including boy scouts, churches, the Rohnert Park-Cotati Rotary Club, and student organizations based at Sonoma State University (see Appendix D).

Community & Group Planting Days and Ongoing Outreach

We continued to hold workdays on the second Saturday of every month, as previously. Approximately 8-10 volunteers came to the September and October

workdays. We renamed our workdays “community planting days,” in the hope that this would be a more appealing title. By mid-November, it was clear that the initial outreach program had been successful. Over 50 volunteers came to the November planting day, and 60 in December. Volunteers ranged from young children with their parents, to students, to seniors, and included members of some of the groups to which we had given presentations. An e-mail sign-up sheet was circulated to add continuing volunteers to the mailing list. Outreach via the e-mail list, *Community Voice,* Community Recreation Guide and other City of Cotati outlets, flyers, contacts with individuals and group leaders, and of course, word-of-mouth in the community, have been ongoing ever since the project launch.

The January to April 2006 schedule began to fill with planting days for specific community groups and college classes. Groups which booked planting days included an SSU student community service group, Boy Scouts, and two Jewish groups which approached us, specifically requesting to plant trees for the Jewish festival of Tu B’Shevat; and even a group of 3-year olds from Cotati’s Co-op Nursery School, and their parents (see Appendix E).

In August 2005, Wade Belew and I took part in a 4-day training course, “Retying Ourselves to the Landscape,” organized by the Bay Institute’s STRAW project (Students and Teachers Restoring a Watershed), and taught entirely by Native Americans. As a result, in January 2006, we joined forces with STRAW for a day of environmental education at Thomas Page School and at Rohnert Park’s La Fiesta School, giving a presentation which focused on three basic concepts: watershed, erosion and habitat. A week later, 99 children, from five classes, with 33 parents, plus teachers, and other

volunteers planted, mulched, and staked a total of 85 plants. A lengthy and very positive article written by two of the teachers was later published in *the Community Voice.* We also followed up the workday with a letter to children to take home, to thank them for their efforts, to reinforce the concepts highlighted during the presentation, and as an outreach efforts to the parents. In February, we combined forces with Acorn Soupe, another environmental education organization, for a planting day with children from Santa Rosa's Meadowview School. We hope to continue this partnership with STRAW, Acorn Soupe, and local schools, in the future (see Resources).

During February, flyers were circulated to biology teachers at the Santa Rosa Junior College, and a number of SRJC students have been attending workdays ever since, including on our February and March planting days when approximately 30 volunteers participated. Because of the exceptionally late and heavy rains, which caused some workdays to be cancelled or postponed, we extended our planting season into May. In April, on Earth Day, over 50 trees were planted, as well as over 180 sedges and rushes, to further reduce soil erosion on exposed banks. During April, we collaborated with a local community service group, "Rebuilding Together: Rohnert Park-Cotati," to arrange a workday with over 30 volunteers, that involved mulching and weeding around existing plantings, and planting trees and rushes in exposed sections at the toe of the creek bank. Our final workday of the season in May was followed by a celebratory barbecue as a "thank you" to our volunteers.

Evening Events

In January 2006, we began a new series of evening events to complement and enhance the restoration program, and to raise public awareness of related issues. Sixty

people attended a presentation on “the Biology of the Laguna” by Denise Cadman, Natural Resource Specialist with the City of Santa Rosa. This was an unexpectedly high turnout and the presentation, a comprehensive overview of the complex natural history of the Laguna watershed, elicited many favorable comments from the audience.

In February we hosted an event entitled “Creating Wildlife Habitat in Your Own Backyard,” to draw attention to the National Wildlife Federation’s backyard wildlife habitat certification program (www.nwf.org). The National Wildlife Federation encourages the creation of backyard wildlife habitats nationwide, by encouraging people to consider providing food, water, shelter, and places to rear young, in backyards throughout the USA. The Sonoma County Wildlife Habitat Project, which is furthering this effort in Sonoma County, supports sustainable gardening practices such as the use of native plants, and minimizing the use of pesticides and herbicides. Approximately 30 people attended the evening’s program. Since then, the National Wildlife Federation has challenged Sonoma County, along with three other counties nationwide, to certify the greatest number of wildlife habitats by August 31, 2006. In response to my request, Cotati’s *Community Voice* published an article about the program and the California Native Plant Society is publicizing the challenge. In the last two months, over 40 Sonoma County backyards have been added to the certification program, bringing the current total to 256.

A key paper in the Conservation Psychology field, “Can psychology save the world? A model for conservation psychology” includes a section on “Gardening and Lawn Care” which reflects the goals of the CCC project. It suggests that presenting these gardening alternatives to home owners “will significantly change the context within

which they make their landscaping choices," and that "as more salient examples of environmentally beneficial yards become visible, people will begin to recognize the connection between environmental health and landscaping choices" (Clayton & Brooke, 2005).

The Northern California Earth Institute (NCEI), sponsored by SSU's Hutchins Institute on Public Policy, promotes study groups for people to "examine and transform personal values and habits, to accept responsibility for the earth, and to act on that commitment." In March, 2006, I joined forces with NCEI to organize an evening on the "Discovering a Sense of Place." While attendance was lower (it was a wet night and there was a conflicting event next door at City Hall), several people signed up to take part in an NCEI study group on this topic, to be held in the fall of 2006.

Evaluation of Outreach Program

To evaluate the program, I conducted a survey in March 2006. A questionnaire (see Appendix B) was circulated to participants of the CCC program and a total of 33 responses were received. The purpose of the questionnaire was:

- To discover which components of the initial Outreach Program were the most successful, and why;
- To understand what people enjoy most about their experience with the CCC, in order to continue to engage them, and to build on the positive support we have received so far;
- To link these findings to the field of Conservation Psychology.

Results are discussed in *Part III, Psychological and Moral Dimensions of Change.*

LAYING THE GROUNDWORK FOR THE FUTURE

The project to involve the local community in planting 2,000 plants along a 5,000 ft. reach of the Laguna in Cotati in two years is just the beginning; there is significant potential to expand its reach and scope in many ways in the future.

Monitoring and maintenance

The grant includes funding for monitoring and maintenance, to ensure a high survival rate for restoration plantings and to monitor the impacts of the project. The Stewardship Coordinator is working with the City of Cotati and with SCWA to establish a long-term vegetation management plan. A local co-housing community has been the first group to rise to the challenge of "adopting-a-section" of the creek for long-term maintenance. We hope other groups will opt to do this in the future.

Educational events

The returned questionnaires indicate a high level of interest in learning more about plant and animal identification, and plant uses and propagation. During May, Wade Belew gave a presentation and led a guided walk on nesting boxes and cavity-nesting birds, and we have scheduled two guided bike rides along the local creeks in June. We will continue to organize a program of events to encourage a sense of community environmental stewardship.

Interpretive Signs; Community Art Work

Interpretive signs would present an ideal opportunity to raise public awareness of Cotati's place in the Laguna watershed, the history and biology of the area, the purpose of the restoration project, and other related issues such as water quality. As part of its matching contribution to the grant, SCWA has budgeted $15,000 to install interpretive

signs. We have raised this issue as a topic for discussion and future collaborative planning with the City of Cotati, Cotati's Community and Environment Commission, SCWA and the Laguna Foundation. At this point these organizations are not ready to construct permanent signs with a regional theme or logo. In the meantime we hope to install temporary signs, perhaps using children's artwork, as a precursor to creating future permanent signs with a regional theme.

Several bridges cross the Laguna in the Cotati area. Many people drive over it on a daily basis without being aware of it, and express surprise when they learn that the Laguna extends as far south as Cotati. We would like to see relevant signposts, and the bridgeheads over the Laguna painted with appropriate murals. The Community & Environment Commission is currently considering a range of community art work projects for the City, and we will work with them to ensure that the bridgeheads will be included.

Southern Laguna Creeks Master Plan and Creeks Stewardship Program

There is a pressing need to find long-term, sustainable, solutions to issues such as flooding, water supply and conservation, storm water management, water quality, soil erosion and sedimentation, invasive species, and loss of habitat. Over the last few decades, institutional and public attitudes have been slowly changing, away from the 1950's "pave-it-and-pipe-it approach" of running rainwater off the land as fast as possible, towards acknowledging and working with the natural hydrology of the landscape. With concern about flooding on the one hand, and water supply on the other, there is a move towards a philosophy of "slow it, spread it, sink it," recognizing the value

of retaining rainwater on-site to recharge groundwater supplies (Cook and Dolman, 2006.)

These concerns are reflected in ongoing planning and policy initiatives undertaken by a range of agencies and organizations. The Laguna Foundation is currently working on a Restoration and Management Plan for the entire Laguna watershed. The North Coast Regional Water Quality Control Board has just held the first of a series of public meetings to develop and adopt a plan to "protect stream and wetlands systems, including measures to protect riparian areas and floodplains." The Sonoma County General Plan is being revised and for the first time contains a water element. The City of Rohnert Park and the City of Cotati are responsible for implementing Storm Water Management Plans, to minimize non-point source pollution such as run-off from roads, and building construction sites.

The City of Rohnert Park is taking the lead to initiate a conversation among stakeholders, including Sonoma County Water Agency (SCWA), the Laguna Foundation, the City of Cotati, and Sonoma State University, to establish a collaborative Creeks Master Plan and creeks stewardship program for the southern Laguna area, incorporating all the creeks in Cotati and Rohnert Park. Relationships across jurisdictional boundaries have not always been easy, so this collaborative approach is a positive new venture. We have held or participated in initial planning meetings with each of these agencies, including the first official meeting of a new Creeks Master Plan Sub-Committee held on April 26, 2006. We look forward to continuing participation.

Seeking funding

We have begun to seek further funding in order to continue and expand CCC's restoration, educational, and outreach efforts. On the restoration front, we would like to establish understory plantings of native grasses and sedges, to complement existing plantings and further reduce soil erosion, as well as to extend the site north of East Cotati Avenue in the future. This will mean consolidating our outreach program and continuing volunteer recruitment. Additional funding would support an extended program of evening events and guided walks, as well as continued participation in collaborative plans for a regional southern Laguna creek stewardship project.

RESULTS AND CONCLUSIONS

The project has been successfully launched, but is still ongoing and in some ways, in its infancy. To summarize the achievements of the project in the first 11 months: the name "Cotati Creek Critters" is now well known in the local community. We have increased our individual volunteer base, attracting up to 60 volunteers to some of our regular community planting days, of which we have held 13. We have given presentations to over 20 groups, resulting in 17 workdays being organized for specific groups, most of which were not previously involved with the project. We have launched a series of educational events and kept the project visible in the local community, both on the ground and in the local media. We have also begun to expand the scope of the initial project, collaborating with others to work towards a larger vision for creek stewardship in the local community.

The initial positive response from the community to the Outreach Program, judged by turnout at November and December workdays and the January evening

presentation, and responses from groups enthusiastic to schedule presentations and workdays, indicates that there is a high level of interest in the project. Responses to the questionnaires reflect a strong desire to "help the environment," and that planting trees along the Laguna in Cotati is seen as making a positive contribution to the community. The project may even fill a need, offering people an opportunity to reconnect with nature by literally restoring the earth in the place where they live, in community with others (*See Part III, Psychological and Moral Dimensions of Change*).

A major strength of the grant-funding program has been its insistence, from the outset, on creating collaborative relationships between a government agency sponsor, a non-profit sponsor, and representatives of the local community. While the Laguna Foundation, a non-profit, has provided administrative support and expert advice whenever needed, the California Department of Water Resources, the Sonoma County Water Agency and the Laguna Foundation have all practiced a hands-off management approach, leaving us free to organize the day-to-day implementation of the project. This provides a positive model for future funding programs.

In addition to the initial project partners, we have begun to establish relationships with community groups, environmental education organizations, schools, the Santa Rosa Junior College and Sonoma State University. Above and beyond the scope of the initial project, we have also begun to collaborate with local agencies to discuss a future creek stewardship program for the southern Laguna area.

The weather has taught us the importance of a flexible approach and adaptive management techniques. The restoration workdays got off to a good start, and we planted over 600 plants, mainly between November 2005 and February 2006. Unfortunately, due

to exceptionally heavy and prolonged rainfall between January and March, leading to water-logged creek banks, some planting days were postponed or cancelled, or there was a low turn out, requiring us to respond to unexpected fluctuations in numbers of volunteers, from a low of 2 to a high of 60! Alternative “rainy day” tasks included mulching Ladybug Lot, to keep the nursery area free of invasive weeds, constructing bins for compost and potting soil, and potting up hundreds of plants to be transplanted next fall. Two successful community planting days were held in April, and one more in May. The Frogsong Cohousing Community decided to “adopt-a-section” of the creek, holding two workdays in the same location.

Some of the most enjoyable workdays have been those involving a wide range of ages and backgrounds, when younger volunteers were mentored by seniors and older members enjoyed the enthusiasm and energy of the younger people. Some smaller groups have been remarkably efficient in the amount of work they were able to achieve; larger groups, logistically harder to organize, have not always been as efficient.

The evaluation survey responses indicate that for the most part we have the right approach, both in terms of outreach and organization of workdays, with some useful suggestions, such as a library exhibit. Participants expressed enthusiasm for continuing education programs and other community activities.

We have been fortunate, I believe, in so far being able to avoid many of the complexities of some other restoration projects. The area where are working is already surrounded by urban development, and it is the only green corridor through the city. We are not dealing with a wilderness area where there might be different philosophical approaches, for example to public access versus protecting wild areas from public abuse

or excessive trampling. So far, we have avoided any arguments over philosophy or perceptions, for example over whether we are supporting “conservation,” or “preservation,” “managing” nature, or “stewarding” it.

The overwhelming majority of the public whom we have met and talked to, including local residents and walkers, are very appreciative of the project. The agencies involved are in broad agreement over aims and methods. We have not so far had to deal with conflicted issues over, for example, whether to spray or not to spray invasive plants (a highly controversial issue in other parts of the Laguna) as the invasive Himalaya blackberry has been removed manually. It seems that planting native plants along the creek is something everyone can support!

As a restoration project, this project is unusual for the area in its emphasis on local community-based involvement, and on combining hands-on physical work with community outreach. It offers exciting opportunities to go beyond its initial scope, with significant potential to implement a wider vision and, with collaborative interaction, to involve the wider community in watershed restoration on a broader scale. It has the potential to become a model for other local watershed groups.

PART III REFLECTIONS: HOW THE PROJECT ILLUMINATES THE THREE PROGRAM THEMES

ECOLOGICAL ISSUES AND SIGNIFICANCE

Cotati can be said to lie at the “headwaters” of the Laguna de Santa Rosa, an environmentally important waterway, which is seriously impaired in many respects. It has attracted the attention of a number of federal, state, and county agencies including the U.S. Army Corps of Engineers, the California Coastal Conservancy, California Department of Fish & Game, the Sonoma County Water Agency, the North Coast Regional Water Quality Control Board and the City of Santa Rosa. The Laguna is considered a priority area for restoration in the Sonoma County General Plan, and the northern section of the Cotati reach has been designated as part of a "greenway" priority conservation area in the Sonoma County Agricultural Preservation and Open Space District's Acquisition Plan 2000.

Flooding, Soil Erosion and Sedimentation

Flooding is a human concern rather than an ecological issue, in the sense that it is a natural phenomenon; the problems occur when humans construct buildings and other infrastructure in the floodplains. However, I am including flooding in this section, as it is a priority concern for the agencies involved.

In some parts of the Cotati reach of the Laguna, Himalayan blackberries fill the creek channel from bank to bank, trapping trash and sediment and reducing hydraulic capacity. As part of the project, SCWA has employed supervised adult crews (jail crews of low-risk offenders), under the direction of CCC’s Stewardship Coordinator, to remove Himalayan blackberry, as part of their flood control measures. Trees planted by CCC

volunteers will eventually form a canopy over the creek, shading blackberries and other vegetation out of the channel. The roots of native trees and shrubs planted along the banks will stabilize banks and reduce soil erosion, helping to reduce sedimentation downstream.

Water quality

The Laguna has been listed as impaired for low dissolved oxygen concentrations, nitrogen, phosphorus, sedimentation and temperature (Winzler & Kelly, 2005). Cool, oxygenated water is important for fish and other aquatic life. Creating a shady tree canopy over the creek will eventually help to lower temperatures and raise oxygen levels. Water samples taken in Cotati during the annual Russian River First Flush water quality monitoring program have contained high levels of *E. coli*, likely to be caused by pet waste entering the Laguna, and high levels of diazinon, a component of insecticides that until recently were widely available in over 250 over-the-counter household and garden products (Katznelson, 2003; McEnhill, n.d.).

CCC's outreach program offers opportunities to highlight the connections between Cotati's creeks, the Laguna, the Russian River watershed, and our drinking water supply, raising awareness about the impacts of people's actions in their own homes and backyards on the wider environment. For example, presentations emphasize that only rainwater should enter storm drains, encouraging residents to consider reducing the use of pesticides which may enter the creek from their backyards, and to clear up after their pets.

Trash and debris

Trash and debris in the creek can exacerbate flooding, affect water quality, and create a hazard for wildlife, as well as being an eyesore. Research has shown that petroleum-based plastics never biodegrade. Pelagic (deep ocean) plastic, in pieces small enough to look like plankton, has been found to outweigh plankton by 6:1 in parts of the deep ocean. It is eaten by birds and fish, causing death. It also attracts and accumulates toxic chemicals such as pesticides, exacerbating the problem (see www.alguita.com)

CCC's project includes removing garbage from the creek. Encouraging children, in particular, to clear up trash helps to foster a sense of stewardship, and creates an opportunity to explain the connections between the local creek in Cotati, the Laguna, and the ocean – and children actually seem to enjoy collecting trash!

Enhancing habitat

Loss of habitat is the main cause of species extinction worldwide. As human settlement in the Laguna area has expanded, so habitat for wildlife has given way to vineyards, other agricultural land, and urban development. According to Greenbelt Alliance and the Sonoma County Farm Bureau, "Between 1988 and 2000, about 3,300 acres of forests scattered throughout the county were converted for agricultural uses," and "The urbanized area of the county increased 14,800 acres between 1986 and 2000" (Greenbelt Alliance & Sonoma County Farm Bureau, 2004).

Native plants are ideally suited to local soils and climate, and have co-evolved over millennia with native birds, animals and insects, providing food and shelter. The trees we have planted will eventually form a shady canopy which will help to keep water cool, benefiting aquatic life, including salmonids downstream in the system. The Laguna

is on the Pacific Flyway, a major migratory route for birds. As part of the project, the Stewardship Coordinator will construct and install 40 bird nesting boxes to provide habitat for cavity-nesting birds.

In addition to these local benefits, trees help to clean the air, provide oxygen, combat greenhouse gases, lower temperatures and increase atmospheric moisture.

Invasive plants

Next to loss of wildlife habitat, invasive plants are the second major cause of loss of biological diversity worldwide. The most problematic invasive plant in the Cotati reach of the Laguna is Himalayan blackberry. In addition there are isolated stands of Giant reed (*Arundo donax*), a significant problem in other parts of the Russian River watershed, Pampas grass (*Cortaderia jubata*), broom, periwinkle (*vinca major*), and ivy. It is particularly important to remove these in the Cotati reach to minimize their spread downstream to the rest of the Laguna.

We are working with SCWA to create a vegetation management plan, beginning with a detailed inventory of existing plants, in order to increase the potential for native plants and reduce the presence of invasive plants.

Raising public awareness

The restoration site is in a highly visible, well-used area. The Laguna channel is the only “urban greenway” through the center of the town, and all other city parks currently consist mainly of mown grass for playing fields. Many residents live adjacent to the Laguna channel, four urban parks adjoin it, and a well-used public footpath and bicycle path run the entire length of the project area and beyond. By location alone, in

addition to its deliberate outreach program already described, the project is attracting attention, creating opportunities to raise public awareness of creek-related issues.

SOCIAL JUSTICE

On its face the creek restoration project is primarily an environmental project, but because it depends upon participation from the local community, it also creates opportunities to work with a cross-section of local residents and community groups, and thus to restore, create or enhance a community spirit and a sense of shared responsibility. We have begun to open channels of communication with several groups, and would like to form positive working relationships with them, as and when appropriate opportunities occur. These include:

Native Americans: The Federated Indians of Graton Rancheria

For thousands of years the area now known as southern Sonoma County and Marin County was home to the Coast Miwok, whose descendants are members of the Federated Indians of Graton Rancheria, a tribe which became almost landless, but which was federally recognized in 2000.

In the summer of 2005, Wade Belew and I attended an inspiring 4-day training workshop organized by STRAW (Students and Teachers Restoring a Watershed, a project of the Bay Institute). The course was taught entirely by Native Americans, including two members of the Tribal Council of the Federated Indians of Graton Rancheria. Tribal Secretary, Jeannette Anglin, has visited CCC's project site, and has since joined the Board of Directors of the Laguna Foundation. Devin Chatoian, who is working for the tribe under an EPA grant, participated in a restoration work day run by CCC in conjunction with STRAW. We are pleased to have taken the first steps towards a

mutually positive relationship, and look forward to finding appropriate ways to work more closely with the tribe in future.

Rohnert Park: St Joseph's; Local schools; Spanish speakers

St Joseph's Neighborhood Care staff is "a team of community organizers bringing neighbors together to improve their quality of life," following the principle, "healthy communities make healthy people." We have attended meetings they have held in response to neighbors' concerns about local safety and flooding issues. I met with organizer Teresa Hernandez to walk a section of the creek and discuss our respective interests, and we have been invited to speak at their May meeting.

Following the successful restoration workday with children from Thomas Page and La Fiesta Schools in January 2006, we wrote a letter, translated into Spanish, as required by the District Office, for the children to take home to their parents, enhancing the concepts we had introduced in the classroom: *watershed, soil erosion*, and *habitat*. We hope that in this way we may have made a positive initial gesture towards communication with Spanish-speaking and other local families, and begun to create a foundation for future interaction. A positive article about the workday, written by two of the teachers at Thomas Page School, was published in the local newspaper, *the Community Voice*, and we received some delightful letters and drawings from the students of La Fiesta School.

Jail Inmates: Supervised Adult Crews; Sonoma County Jail Industries

The Sonoma County Jail Industries' horticultural program has provided some of the plants for the project. Wade Belew has given presentations to jail inmates, which we hope will help them understand more fully the purpose of the project and the value of

their contribution. We will continue to involve supervised adult crews in the work, particularly removal of invasive plants.

Disability, physical limitations

Most of the work of the restoration project involves physical labor. Some of our volunteers are not able to do physically demanding work, because of age, injury or physical disability. Our intention is to find appropriate work to suit differing abilities whenever possible. We hope that by being sensitive to individual needs as they arise, we will continue to match volunteers to useful, worthwhile, and appropriate tasks whenever possible.

At-risk youth

We have encountered some problems with vandalism, and it seems likely that those involved are young people who regularly congregate at Ladybug Park. We are aware of the potential and will look for opportunities to engage young people, such as these, and to channel their energy into positive action.

PSYCHOLOGICAL AND MORAL DIMENSIONS OF CHANGE

Ever since 1971, when Edgar Mitchell and his team first relayed photographs of the image of the Earth from outer space, we have become acutely aware that there is only one fragile, beautiful, habitable, planet Earth. As the environmental crises, from pollution to soil erosion, from extinction of species and loss of biodiversity to global climate change, loom ever larger and more urgent, so it has become clear to scientists that humans are part of the complex, delicate web of life, inextricably dependent on the Earth’s fully functioning ecosystems (Meadows, D., 2004; Brown, L. 2001).

For millenia, indigenous people around the world have regarded the Earth as alive and sacred. Native American and other indigenous cultures are rooted in a sense of place, and reciprocal relationships with the world around them. In the Maida language, the word for the people had for themselves meant “being.” “The Cherokee language has a word, *eholeh*, that means land, religion, history and culture, all at the same time, without dualisms” (Hayden, 1996).

Many nature writers including Thoreau, Emerson, John Muir; philosophers; and more recently scientists, ecopsychologists, and others, have explored the origins and implications of the increasing sense of separation, in the western world, between people and the world around them. The attitude that the Earth is purely material, and that humans are superior to it, has allowed us to regard the Earth as a source of “resources” to be used and discarded, rather than as a living system of which we, too, are an integral part and upon which we depend (Lovelock, 1988; Suzuki, 1997; Berry, 1988; Sheldrake, 1991; Capra,1982). Our entire economic system is based upon this view of the world as a limitless resource, into which we can also “throw away” all our wastes. This view of nature as a commodity has had disastrous consequences, not only for an “environment” “out there” but also for the human psyche and society. In modern western society, people have become increasingly dislocated and alienated from nature and from a sense of connection to any particular place. Economic pressures, the frequency of moving home, often for economic reasons; family break down, commercial pressures from marketing and advertising, lead not only to ever higher levels of material consumption, but also to a sense of isolation and alienation, even individual and societal breakdown. There is a need

for a connection with nature and for establishing a sense of community (Barrows, 1998; Louv, 2005; Osman & Stolmaker, 2004; Roszak, Gomes & Kanner, 1995).

"Technological development has resulted in a shift away from daily interaction with nature, from humans being a part of nature, to being apart from nature (Roberts 1996). The paradox is that we live at the height of technological mastery, yet find ourselves separated from both the earth and each other in 'an unsettling nexus of domination and homelessness' (Seamon and Mugerauer 1985, 1). As a result, the desire for opportunities to reconnect with nature and places is increasing (Dustin 1994)" (Bott, Cantrill & Myers, 2003).

It is not enough to connect with nature in some abstract sense. When the American poet Gary Snyder was asked how individuals could best help resolve the environmental crisis, he responded with the words: "Stay put," and Terry Tempest Williams wrote, "Perhaps the most radical act we can commit is to stay home" (London, n.d.). Our sense of connection to nature is grounded in relationship to a particular place. "It is not enough to just 'love nature' or to want to 'be in harmony with Gaia.' Our relation to the natural world takes place in a place, and it must be grounded in information and experience" (Snyder, 1990). It is this sense of connection to place that nurtures our propensity to care and to act to protect it. "We cannot but live somewhere in particular...to live in vagueness towards where we live, the place that lives us, is to place our living place in peril" (Murphy, S). This applies to ordinary, everyday places, where we live our lives. "It is through close and particular contact with a particular patch of ground that we learn to respond to the earth, to see that it really matters. We need to recognize the humble places where this alchemy occurs... Everybody has a ditch, or

ought to – for only the ditches, the fields, the woods, the ravines – can teach us to care enough for all the land" (Pyle, 1993).

In *the Ecology of Place*, Beatley and Manning write of "the challenge to instill a sense of caring about place and environment" (Beatley & Manning, 1997). Tree planting, they suggest, is "a demonstration of commitment to the future." It is a practical, visible way for people to become involved in their local communities, an example of a strategy "to provide opportunities for citizens to make tangible expressions of their commitment to place and to the future inhabitants of their community" (Beatley & Manning, 1997).

Wangari Maathai, 2004 Nobel Prize Winner for her work on sustainable development, democracy and peace, who inspired thousands of women in Kenya to plant 30 million trees, is quoted as saying, "It's the little things citizens do. That's what will make the difference…My little thing is planting trees" (Hayes, 2006).

In October 2005, Bruce Babbitt, US Secretary of the Interior from 1993-2001, was keynote speaker at a conference which I attended, run by the Society for Human Ecology in Salt Lake City, Utah. Even while engaged in protecting large acreages of wilderness, extending national parks, and creating national monuments, he was aware that for every acre protected far more were being destroyed by creeping urbanization, and encroachment into rural areas around town and cities. He argued for a change in land use policy, away from the emphasis on fragmentation where decisions are made at a local level, towards a federal policy to protect open space and wildlife habitat. He emphasized that although the country is at an all-time low in terms of environmental policies, the pendulum will swing back eventually, as it always has. In the meantime, he suggested that now is the time to work together, to learn, educate ourselves, and create connections.

One under-utilized place to do this, he said, is in local Planning Commissions, and by connecting people, at a local level, to the issue of water.

> It is not sufficient just to save the remaining fragments of our natural river systems, however. Just as we have awakened to the possibilities for restoring the land, we should now take steps to bring our dead and dying rivers back to life… The waters that surround us cannot be simply divided up, used and thrown away like commodities from a store shelf. Everyone lives downstream from someone else, and how we use water in one place has repercussions throughout that watershed, for wildlife, for the land, and for our own well-being (Babbitt, 20005).

The expression, "we all live downstream," implies that we are all affected or impacted by our collective actions in relation to the environment. It is equally true to say that "we all live upstream," implying a collective responsibility for our actions - but in Cotati, it is especially true that we all live upstream!

Garret Hardin's famous essay, *The Tragedy of the Commons*, explores why people do not value and take responsibility for "the commons" (Hardin, 1968). But as Gary Snyder points out, "the commons" can become an opportunity to bring the community together for a common cause (Snyder, 1990). The Laguna de Santa Rosa channel that runs through the City of Cotati is the nearest thing we have to a "commons" in the town. A decade ago, many local residents regarded it as a ditch, a wasteland on which to turn their backs and even dump their rubbish. Sadly some people do still dump trash, bottles and cans and shopping carts, into the creek. But slowly, it has also begun to be recognized as a shared, collective, treasure and a responsibility. It may be an artificial drainage channel but it has potential. It is now more widely recognized that the Cotati lies at the "headwaters" of the Laguna. A City notice board by a small wetlands mitigation area, surrounded by recent urban development, declares that "This Valley Oak/Wetlands Restoration is part of the Greater Laguna de Santa Rosa Ecosystem." CCC's initial

outreach letter to groups stated our vision, “to see Cotati’s reach of the Laguna de Santa Rosa become a green corridor for native wildlife, including resident and migratory birds, pond turtles, frogs, butterflies and dragonflies, as well as an enjoyable urban greenway with its walkways and bicycle path.”

“Restoration is a way for people to develop a relationship with the land” (Schneider, 1994) and can serve as “an impetus for individual and community renewal” (Shapiro, 1995). Increasingly, watersheds are being seen as the natural focus for efforts at community-building and restoration (House, 1999). Ecological restoration and community-building are intertwined. Eric Higgs writes of what he calls Focal restoration as the path of “community engagement and local culture“ (Higgs, 2003). Restoration offers people an opportunity to become fully engaged: “People connect more deeply with natural processes when they get their hands dirty, literally” (Higgs, 2003). This engagement is restorative at the community level as well as for the land. “What is so distinctive about restoration as a practice is that it builds value through participation, and in doing so strengthens human communities. Restoration is doing well when it nourishes nature *and* culture” (Higgs, 2003).

Involvement in ecological restoration has wider ethical implications, too, enhancing human relationships with nature, as an antidote to the pervasive materialistic, economy-oriented vision of nature as a commodity: “Restoration must become a community activity in the way that backpacking can’t. Restoration works well at the community level… Restoration ecology is experimental science, a science of love and altruism. In its attempts to reverse the processes of ecosystem degradation it runs exactly

counter to the market system, to land speculation, to the whole cultural attitude of regarding the earth as commodity rather than community" (Mills, 1995).

The issue of scale is important. A project should be small enough for residents to participate and feel fully involved, rather than to perceive "outsiders" as being in control (Cheng, 2005). At a neighborhood scale, people can work together to develop relationships both with the place where they live and with one another in the community.

Joanna Macy, Buddhist scholar, activist, and writer, told me that what the Cotati Creek Critters doing is *sarvodaya shramadana*, which in the language of Sri Lanka means literally, "Everybody wake up by working together." In *World as Lover: World as Self*, Macy explains that the term *sarvodaya* was originally coined by Gandhi to mean "the uplift and welfare of all." It was given a Buddhist twist by A.T. Ariyaratne, founder and president of Sarvodaya Shramadana Sangamaya, a Buddhist-inspired, village-based community development movement. *Sarvodaya* means 'the awakening of all' or 'everybody wakes up.' S*hramadana* means literally "the giving of human energy."

> 'Everybody' includes the landless laborers as well as the farmers, the school dropouts as well as the university trained; the women and children and old people along with the merchants, managers, and civil servants. What they call "awakening" happens when, prompted by the local Sarvodaya organizers, they meet together, plan, and carry out joint community projects. They wake up to their real needs, to their capacity to work together, and their power to change (Macy, 1991).

Macy writes of people working together and learning from one another in mutually enriching ways, "discovering new dimensions within themselves and new promise for their society. This involved discomfort and hard work, and yet it released an enthusiasm that spread and soon constellated into a nationwide self-help movement." She writes of a growing sense of community, power, and possibility:

> The collective action combined with the fresh respect it breeds for manual labor can generate a personal commitment to the development of the village that no government programs or foreign aid projects appear able to duplicate. Public reforestation schemes, for example, often founder because villagers neglect the seedlings, letting goats and cattle eat them. But when undertaken as *shramadana*, with the sense of ownership and responsibility that brings, the plants are watered and protected (Macy, 1991).

By telling me that "what you are doing is *sarvodaya shramadana*," Macy affirmed that the work that CCC is doing has value at many levels. On some of CCC's community planting days, in particular when volunteers of all ages from about 7 to 70 have been working together to plant trees, I have been struck by the positive and inspiring energy created by people of different ages and backgrounds working together creatively and cooperatively. Young cub scouts received guidance from elders, and elders were inspired by the enthusiasm and energy of the young people. The cub scouts said that they would like to come again, or didn't want to leave. People went home tired, muddy, and happy, with the sense of achievement and satisfaction that comes from the combination of physical, outdoor work, a worthwhile task completed, and a sense of having contributed to a greater whole.

QUESTIONNAIRE RESULTS

During February and March 2006, I circulated a questionnaire to CCC event participants and to the CCC email list, in order to (a) evaluate the Outreach Program and (b) explore how to engage participants in the long-term, building on the initial positive relationships that have been established. A total of 33 responses were received. (See Appendix B for questionnaire and Appendix F for full responses.) It is hard to tell how representative a sample this is. It is likely that those who are the most engaged and

motivated, who feel most positive about their experiences with CCC, and/or who know me personally, are the ones who took the time to complete and return the questionnaire.

Questions 1, 2, and 3 asked participants where they first heard about the Cotati Creek Critters; when they first took part in a restoration/planting day; and how many times they had volunteered.

Over one third had heard about CCC through a friend or by personal contact with Wade Belew or myself, but specific bulletin boards, the local newspaper, and Wade's radio program were also mentioned. No one mentioned our first major outreach effort – a flyer inserted with the City of Cotati's water bills to every household in the City in May, 2005.

Seventeen respondents said they had first volunteered with CCC in 2005-6, which mirrors our perceptions that many new people have come on board since the 2005-6 Outreach Program began, but that we have also had a number of supporters (13) for several years. 3-4 individuals who have not actively participated for a few years responded to the questionnaire, suggesting a lingering loyalty!

Seventeen had volunteered 2-5 times, eight 1-2 times, and three 6 times or more. This reflects our perception that we have begun to engage a small hardcore of dedicated, enthusiastic volunteers who are willing to work above and beyond the 3 hours once a month, perhaps arriving early or staying late to help prepare or clean up after a workday, or coming to help on extra days. We are also beginning to see a number of volunteers who are "regular" to some degree.

Asked what would attract other people to join in or keep coming (Question 10) a typical comment was, "Keep doing what you're doing. Your community outreach ideas

and follow through appear to be very successful." There were a few new ideas, including an exhibition at the local library.

The way I worded Question 4 was confusing for some people. I asked them to rate nine different motivational factors on a scale of 1 to 5, with 1 being extremely important and 5 being not at all important. In a few cases, the numbers were not congruent with written comments. I verified the correct answers by telephone and adjusted the figures accordingly.

When respondents were forced to choose between individual factors and assign a numerical value, "Helping the environment" was the highest motivational factor. It was rated "1 = extremely important" by 24 of 33 responders. "Getting involved with my local community" came second; 12 responders rated it as extremely important (1), 14 as very important/important (2). See Figure 4 and 5 below, and see Appendix F for full responses.

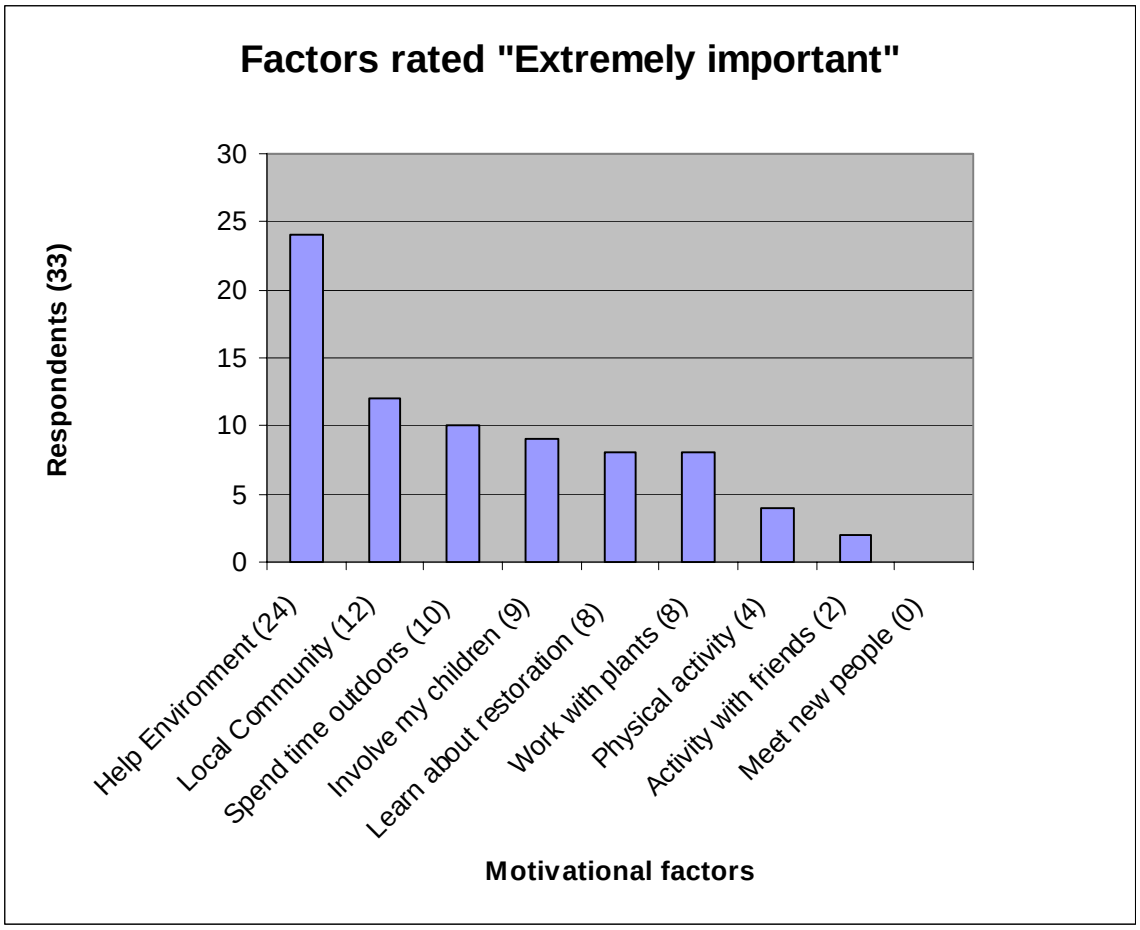


Figure 4. Questionnaire results: motivational factors rated “extremely important.” This figure reflects questionnaire participants’ responses to the question, “What first motivated you to volunteer with the Cotati Creek Critters? Please rate on a scaled of 1-5, 1 = extremely important.” For 24 out of 33 respondents, helping the environment was “extremely important.” For 12 respondents, getting involved with their local community was “extremely important."

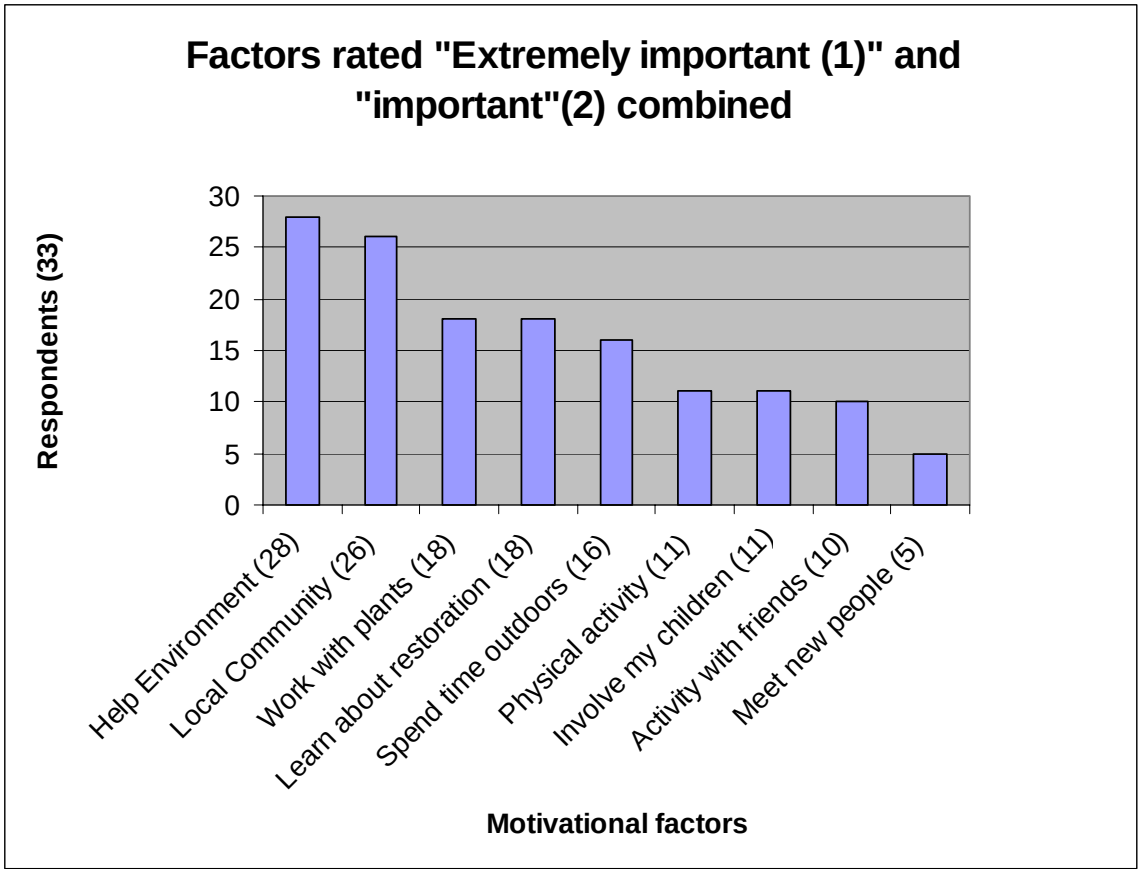


Figure 5. Questionnaire results: motivational factors rated "extremely important" or "important." This figure reflects questionnaire participants' responses to the question, "What first motivated you to volunteer with the Cotati Creek Critters? Please rate on a scaled of 1-5, 1 = extremely important, 5= not at all important." For 28 respondents, getting involved with their local community was either "1=extremely important" or "2" (very important/important).

When people were forced to make choices and assign a numerical value to ready-made categories, "Helping the environment" was the most important and "getting involved in my local community" was the second most important factor. However, when asked for their written comments on what first motivated them to volunteer (Question 4), what they enjoy most about working with CCC (Question 8),

and what would attract other people to join in and keep coming (Question 10), many of the responses combined several factors: “Meeting like-interested people, working side-by-side improving and sustaining our environment,” “I like the people. A sense of community. I like working with the plants and earth. I enjoy working with people and kids in the planting,” and “Mainly learning about California plants, working with the earth, getting dirty, and the results also being making new friends with similar interests.”

Several people commented solely or primarily on the environmental impacts: “Restoring environment to attract wildlife and working/being in a nice outdoor setting,” “Improving the environment,” “Helping to make our watershed a viable part of the local ecosystem,” “Working alongside my neighbors restoring habitat, preserving natural land. Bringing awareness of biodiversity, ecology into the community.”

Almost as many people mentioned the sense of community, the sense of satisfaction at seeing positive change occurring, and/or the reward of making a personal contribution: “I’m impressed by the number of everyday neighbors and their kids coming out to participate, from teenagers to the elderly. It feels like a real community;” “Major impact that CCC is having in our community, and being involved is rewarding;” “The sense of self-satisfaction and knowing I’m contributing to the community;” “It’s been satisfying seeing change over time from the group’s efforts as I walk around the Laguna. I admire how the ‘team’ has grown to include so many other groups from the community.”

A positive, enthusiastic attitude was regarded as important both for attracting people and for keeping them engaged. The visible change taking place itself contributed to this enthusiasm: “Joy of seeing positive change, trees growing over time,” “Seeing the quick transformation that happens with so many hands at work.” “Well organized, well attended, making a huge difference. I get a big grin on my face every time I walk along the creek – which is about three or four times a day!”

A few people specifically mentioned learning something new: “We enjoyed the knowledge that we obtained. We arrived with the preconception that we ‘knew’ about planting, but learned that we were wrong;” “Very informative. My volunteers enjoy the education;” “CCC has done a great job in educating our volunteers about the creek and how they are personally helping.”

“Involving my children in a local activity” is very important to a few individuals. Teachers and Sunday school teachers used this opportunity to comment: “Having an opportunity for my children to be involved in doing something that makes a difference;” “It was great to work with kindred spirits to teach kids about things that I love to do;” “I wanted an activity we could do with the kids in our school…[we have worked with] Wade and Jenny three years running. We love their way with the kids, the message of the work they do and being able to help our community.”

Some people commented on the organization or logistics of the workdays: “Well organized;” “Well set up, and you gave clear explanations of what you wanted done;” “The folks who were directing the work are friendly and flexible and enthusiastic and encouraging;” “The leadership is inspiring. Jenny and Wade both have wonderful talents they bring to the project;” “The timing is good – long enough to achieve something, but

still have time left to do something else for the rest of the day." Refreshments, and letting people know that refreshments would be provided, were specifically mentioned three times.

One teacher commented to me personally, on a separate occasion, that of everything the children do, it is practical, hands-on activities in the community, like these, that they remember and that make a lasting impression.

Cub scouts have joined us for Community Planting Days on two occasions, working together with other members of the community. One man commented to me that he had been a cub scout himself when he was young, and that he enjoyed the opportunity to work with young people in this way: "I was a cub scout once. It was a formative experience and it was good to have the opportunity to mentor a cub scout today… Who knows where it may lead?"

One volunteer who has a physical disability commented to me, "It feels so good to be able to give back, instead of always being on the receiving end."

Two Jewish Sunday schools approached us asking if their children could participate in tree-planting for the Jewish celebration of Tu B'Shevat. One of the teachers later told me that for some Jewish children, opportunities for environmental education and restoration offer an important bridge between the spiritual values they bring from their home and culture, and the more materialist mainstream culture they encounter out in the world.

One person commented, in a telephone interview, "CCC is the only group of this type in Cotati/Rohnert Park doing grassroots community-based, local, face-to-face work – it's once of a kind."

Overall, the written comments suggest that the combination of working *alongside others* to *improve the environment* in the *local community,* with *visible evidence* of *contributing* to *positive change,* provides an experience which is satisfying and enjoyable, and perhaps fulfils a deeper need for connection with nature, place, and community.

When asked about their interests in guided walks and evening events, the strongest-stated interests were in learning about plant and animal identification, birdwatching, traditional plant uses and plant propagation, and to a lesser extent, wider environmental issues: "Plant ID and bird-watching, history of the creeks in Cotati,""Birds and wildlife of local area," "Bird-watching, frogs, other creek critters;" "Flora/ fauna/ geology/outdoors/ cycling?" "Plant identification and traditional uses for these plants i.e. medicinal, good for baskets etc.;" "Wild edibles/medicinals;" "Life in miniature – insects, worms, moss and small plants and how it all fits together to create the whole." "Pond turtle habitat." "Common plant, tree, animal identification and behavior, endangered species like tiger salamander." "Local farmers, CSA's and how purchasing local and organic foods helps the environment, including reducing emissions from transporting food." One person suggested "Perhaps something emphasizing the links between spirituality and nature."

In Questions 11 and 12, I asked people whether they were active in (a) an environmental group (b) any other local community organization. I was curious to know whether they already identified with either "environmental" or "community-oriented" activities, or whether we were "tapping into" a new pool of people, not previously engaged. 15 indicated they were involved with an environmental group, 16 that they were

not. 16 were involved with another local community organization; 14 were not. 6 indicated being involved with both environmental and community groups; 6 indicated that they were involved with neither. This suggests that a majority considered themselves previously involved in some way, with approximately equal numbers involved in either environmental or community action.

I compared these results with a more comprehensive study of volunteers working with the Illinois chapter of the Nature Conservancy, based on a total of 27 issues of newsletters published during the period 1991-95, representing nine different volunteer groups (Shroeder, H., 2000). Some of the same motivational factors I included directly in my questionnaire emerged as themes in these newsletters, including "Making a difference – acting locally, being part of a larger effort," "personal rewards – seeing tangible results, learning and sharing knowledge, enjoying the outdoors," and "social dimension – developing a sense of community." From his study, Shroeder concluded that "the sense of urgency and immediacy they feel about the fragility of nature and the impending loss of native sites and species" was the most important motivational factor for volunteers. Second was their belief that they could make a difference: "By getting actively involved, volunteers see the possibility of actually changing the course of things and achieving a better outcome for the future. Third is the ability to see tangible progress from their efforts in a fairly short time span."

Shroeder concluded that to maintain the motivation and enthusiasm of volunteers it is important to highlight "the importance of restoration to the future of the local, regional, and global environment, and [to provide] frequent opportunities for volunteers to see the tangible outcomes of their work." By creating opportunities for volunteers to

learn and share knowledge, and by building “enjoyable outdoor activities, and social events into their programs, volunteer coordinators can help make the volunteering experience still more engaging and rewarding” (Shroeder, 2000).

Based on the Cotati Creek Critters experience from 1999 to 2005, we did not know how much interest or concern there might be amongst local people to improve the conditions along the Laguna channel. A typical average workday would attract anything from 8 to 15, mainly regular, volunteers. From the initial response to the DWR-funded Outreach Program, between September 2005 and April 2006, it is clear that there is a great deal of interest in the local community, and willingness by people to become directly involved in the restoration project, which has received a good deal of enthusiastic support. Outreach to already existing local community groups and educational institutions has been key in making connections and publicizing activities.

We look forward to consolidating the work we have done so far, in the coming year; continuing to build on the positive connections and relationships that have been made; providing a program of exciting and worthwhile volunteer projects and educational events; strengthening and expanding our program in Cotati and, collaboratively with the City of Rohnert Park and others, supporting the establishment of other similar programs.

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RESOURCES:

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Napa, California 94559
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E-mail: info@acornsoupe.org
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National Wildlife Federation
11100 Wildlife Center Drive
Reston, VA 20190-5362
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www.nwf.org/backyardwildlifehabitat/

Northern California Earth Institute
www.sonoma.edu/hutchins/ncei/
An affiliate of:
The Northwest Earth Institute
317 SW Alder, Suite 1050
Portland, Oregon 97204
Phone: (503) 227 2807
Fax: (503) 227 2917
www.nwei.org

Occidental Arts & Ecology Center
& WATER Institute (Water Advocacy, Training, Education and Research)
15290 Coleman Valley Road, Occidental, CA 95465
Phone: (707) 874-1557
www.oaec.org

STRAW (Students and Teachers Restoring a Watershed)
The Bay Institute of San Francisco
500 Palm Drive, Suite 200, Novato, CA 94949
Phone: (415) 506-0150 Fax: (415) 506-0155
E-mail: bayinfo@bay.org
www.bay.org

APPENDICES

APPENDIX A

Excerpts from Cotati Creek Critters' grant application to the California Department of Water Resources Urban Stream Restoration Program, January 2005.

Does your project site meet the definition of "urban stream"? ... Is it in an area developed for residential, commercial, or industrial use? If not, is it designated for such development in an adopted general plan?

Yes. The 5,000 ft. project site is an urbanized section of the Laguna de Santa Rosa (Laguna) flood control channel, lying within a residential neighborhood in the City of Cotati. This site is a portion of the three-mile Cotati Reach, which is the headwaters and the only urbanized portion of the Laguna waterway, that flows an additional 11 miles through wildlands and agricultural areas to the Russian River. Within the three-mile urbanized reach, the Laguna channel crosses through Cotati, with a population of approximately 7,000 residents, and borders Rohnert Park, a city of over 42,000. The stream's first two miles is bordered by land with residential zoning; the third mile is zoned industrial. Nearby residential development include four major developments that have been constructed in the last 2-3 years, and one currently under construction. Several large culverts from storm drains in Cotati and Rohnert Park empty into the main channel. Three road bridges and three bicycle bridges cross the channel at intervals. Much of the main channel has been channelized, although not armored. Cotati Creek, a major tributary, has been channelized and sections of it are a concrete channel.

Summarize your proposed project in one-half page or less and explain how it meets the goals of the USRP, including contributing to the reduction of property damage from

floods or bank failure, enhance environmental values, and promoting community stewardship.

The proposed project will reduce flooding risks, enhance water quality and native habitat by mobilizing community volunteers to remove invasive species and debris, and restore riparian vegetation in a channelized urban stream. The revegetation site is a 5,000 ft reach of stream, acting as a flood control channel for the City of Cotati. We will reduce flooding risks by removing densely-growing invasive Himalayan blackberry from more than 1000 ft of the channel, along with trash and debris accumulated in the vegetation. We will also remove isolated stands of other invasive species, including Giant reed (Arundo donax) and Pampas grass (Cortaderia jubata). Where appropriate, these will be replaced with native trees and shrubs. Serious erosion is threatening to undercut a section of the bicycle path which runs alongside the creek, adjacent to a 36-unit residential development currently under construction. Working with engineers from the Sonoma County Water Agency, we will use native vegetation to stabilize the bank, thereby preventing potential bank failure and damage to the bicycle path. These actions will enhance environmental values in multiple ways, and will also improve water quality, create and enhance wildlife habitat. Wildlife habitat will also be increased directly by erecting bird-nesting boxes along restored areas. This project will promote community stewardship as the majority of restoration activities will be performed by volunteers, including school children, students and local residents. Volunteers will be mobilized through a unique educational outreach program to schools, community groups and churches. Interpretive signs, erected along the creek by the Sonoma County Water Agency, will educate residents about restoration activities. We will use this opportunity

to raise awareness about the residents' impacts on water quality and wildlife habitat, and give them an opportunity to become involved in hands-on community stewardship.

Describe how the stream relates to the larger watershed. Discuss the historical and current conditions in the watershed. Please include information on the following if available.

a.) Describe hydrologic conditions. Include information on type of stream (perennial, intermittent, ephemeral), land use changes, channel configuration (natural, channelized, culverted, etc.), and factors affecting stream function such as dams or constrictions.

b.)Is there a watershed planning effort under way for this stream? If so, please describe.

The Cotati Reach project site is the headwaters of the Laguna de Santa Rosa waterway, the largest tributary to the Russian River. The Laguna channel drains a 240-square mile watershed, home to more than 250,000 residents. Downstream of the urbanized Cotati Reach, the Laguna waterway is considered a very high-value wildlife area, connecting a mosaic of creeks, marshes, vernal pools, ponds and oak woodlands. This forms the largest freshwater wetland complex on the north coast of California. Aerial photographs show that the lands surrounding the modern day cities of Cotati and Rohnert Park were once also wetlands, which were drained for agriculture in the late nineteenth century, and later for urban development. The Cotati Reach of the Laguna de Santa Rosa is a flood control channel, surrounded for two miles by residential development, and for one mile by industrial development.

a.) The northernmost section of the Cotati Reach meanders slightly and appears to have been straightened, but has earthen banks. The southernmost section is channelized but not armored. Cotati Creek, a major tributary to the Cotati Reach, is in part a concrete

channel. Several large storm-drain culverts empty into the main Cotati Reach channel. Three road bridges and three bicycle bridges cross the channel at intervals and the road bridges are significantly constricting to water flow. Water levels fluctuate greatly in this hydrologically 'flashy' system. After heavy winter rains the channel becomes a fast-flowing river which rapidly subsides. In summer, sections of the Reach become dry, leaving areas of low flow or stagnant pools. Urban development is very active in the cities of Cotati and Rohnert Park, with four major housing projects built close to the Cotati Reach in the last 2-3 years, and one currently under construction.

b.) The project area has been a restoration focus for the City of Cotati's Community & Environment Commission since 1995, and stream-enhancement is part of Cotati's General Plan. An ad hoc citizen's group, the Cotati Creek Critters, have been implementing small-scale restoration projects since 1999. As the Cotati Reach is the headwaters of an environmentally important natural waterway, it is also part of several watershed-scale planning efforts for the Laguna de Santa Rosa, and the Russian River. Because of the Laguna de Santa Rosa's environmental value, many agencies and organizations have placed high priority on its restoration. The Laguna de Santa Rosa Foundation, funded by the California Coastal Conservancy, the Community Foundation of Sonoma County, Sonoma County Water Agency and City of Santa Rosa, is currently developing a Laguna de Santa Rosa restoration and management plan, which will create a "blueprint" for restoring the Laguna ecosystem. This planning process will dovetail with the Integrated Regional Watershed Management Plan, being produced by the Sonoma County Water Agency. Erosion and flood-control efforts in the headwaters and tributaries of the Laguna are the focus of intense planning efforts by the U.S. Army Corps of

Engineers and the Sonoma County Water Agency. The Laguna is considered a priority area for restoration in the Sonoma County General Plan. The northern section of the Cotati Reach has been designated as part of a "greenway" priority conservation area in the Sonoma County Agricultural Preservation and Open Space District's Acquisition Plan 2000. The California Department of Fish & Game considers the Laguna a high priority for wildlife, and has a Conceptual Area Acquisition Plan in place to purchase and protect natural areas downstream from the project site. The Laguna is also included in the North American Waterfowl Management Plan, Pacific Coast Joint Venture.

Describe the project site conditions in the context of the stream reach.

a.) Discuss flooding/erosion problems at the site, including information on property damage, bank failure, sedimentation and safety hazards.

b.) Discuss environmental concerns about vegetation (e.g. natives, exotics), wildlife and aquatic species habitat, water quality and other issues.

c.) Are there other stream-related problems?

Project site conditions are at best only fair, and need serious attention to remediate flood and erosion risks, and to enhance wildlife habitat.

a.) The most significant flooding hazard is the presence of Himalayan blackberries, which fill approximately 1000 ft of channel, bank to bank, in the area to be revegetated. In one area, high erosion along a steep bank is threatening to undercut the bicycle path above, adjacent to a new housing project. Other areas are at risk of erosion, as sparsely vegetated banks provide little stabilization. Long stretches of the creek are filled with weeds, trapping trash and sediment, and reducing the hydraulic capacity of the channel. The U.S.

Environmental Protection Agency has listed the Laguna as ‘Impaired’ for sediment, and a recent study by the U.S. Army Corps of Engineers predicts sedimentation will increase flood levels in the Laguna system by three feet within the next 40 years, threatening urban infrastructure. Residential development borders directly on the stream channel, and potential flooding will directly impact these properties.

b.) In addition to Himalayan blackberry, other exotic invasive plants occurring at particular sites include giant reed (Arundo donax), pampas grass (Cortaderia jubata), broom (Cytisus scoparius, Genista monspessulana), periwinkle (Vinca major), and others. Tree cover is sparse or non-existent, and the channel is clogged with mainly non-native grasses. There is anecdotal evidence that steelhead, a threatened species, once lived in the creek, but now there is not enough water year-around for fish to survive. There are reports that western pond turtles, a species of concern in Sonoma County, were prolific over a decade ago, yet few have been observed during the last few years. Upper reaches of Cotati Creek, a tributary to the Cotati Reach of the Laguna, reportedly still provide good habitat for the turtle. The Laguna is a key resting and feeding place for migratory birds traveling the Pacific Flyway and is habitat for an estimated 250 species of birds. Over 40 species have been observed in the Cotati area over the last few years, with declining sightings of egret and heron. There is a great deal of potential to improve habitat for birds. The lack of tree cover and lack of standing dead trees limit the available nesting and roosting habitat for many bird species. There are still some stands of native coyote bush and native trees such as black walnut and coast live oak.

c.) In addition to problems associated with sediment, the E.P.A. lists the Laguna’s water quality as ‘Impaired’ for elevated nitrogen, phosphorus, and temperature, and for low

dissolved oxygen. Water samples taken during 'Russian River First Flush', which captures impurities from surface waters during the first large rain event of the season, found high levels of E. coli in 2003, and diazinon in 2002. Nutrients and impurities in run-off from the Cotati Reach are thought to contribute to poor water quality, invasive weed growth, and other environmental problems in the natural wildlife areas downstream. Dog walkers are significant users of the path along the creek. The City of Cotati installed dog waste bags and disposal containers several years ago and although most dog walkers use them, a number are still not compliant and also allow their dogs to chase wildlife in the creek. Part of the outreach program will include educating dog walkers about the importance of clearing up after their dogs and respecting wildlife.

Describe the stream restoration or watershed management techniques you will use…

The proposed project consists of three main phases: I) Removal of Himalayan Blackberry and other non-natives; II) Revegetation; III) Irrigation and Monitoring.

I) The Sonoma County Water Agency (SCWA) will be responsible for removing blackberry and other large non-natives plants, implemented by subcontracted Supervised Adult Crews (SAC) of low-risk misdemeanor offenders from the North County Detention Facility. SAC crews consist of 10 workers, a probation officer and all the needed tools. Prior to removal work, the restoration project manager and an SCWA biologist will flag existing native vegetation to be safeguarded. Using high-powered two-cycle brush cutters, the crews will cut and remove plant material and load it into an SCWA truck that can access the bike path. Plant material will be taken to Sonoma Compost at the Sonoma County Central Landfill.

Crews will return to sites several months later and follow-up with removal of re-grown plants. The SCWA may selectively use an approved herbicide to stump-treat vigorous re-growth, especially for plants like Pampas grass and Giant reed. Work will be conducted in a way to minimize soil disturbance. Any erosion potential created by non-native removal will be mitigated with staked down straw and jute webbing.

II) Re-vegetation with native trees and understory plants and shrubs will began in Fall 2005 in areas not dominated with blackberry. The Restoration Project Manager and SCWA biologist will source and site appropriate native plants as outlined on plant list. Plants will be kept and tended until planting days at the small nursery we will set up at the city yard. SCWA will provide two-man crews prior to planting days to power-auger planting holes.

Volunteer community groups recruited by our outreach program will be asked to participate in at least two 3-hour workdays a year. We will average 40 plantings per workday over 50 workdays in two years. The golf cart and utility trailer will be used to safely and efficiently transport plants, tools and supplies from nursery to planting site. Planting will be done by the volunteers under the supervision of the Restoration Project Manager. After each tree or plant is placed and backfilled with amended soil, a weed barrier of cardboard and straw and two stakes will be added.

III) Irrigation and monitoring will ensure the highest possible survival rate. A drip irrigation system will be installed with water provided by the City of Cotati. The Restoration Project Manager will monitor the entire reach weekly. Volunteer groups will be asked to “adopt” individual planting sites to provide replacement plantings, long-term care and weeding. Watering will be discontinued when plants are established. Drip tubing

will be removed and reused on future projects. Mowing will continue until a canopy is established. Plant survival will be documented in our final report, and incorporated into our long-term monitoring program.

Describe the benefits of your project:

a.) How will your project contribute to the health of the watershed?

b.) How will your project reduce flooding, property damage or bank failure (it may do so by restoring the stream system or reducing sedimentation or maintenance problems)?

c.) Will it improve channel form or function?

d.). How will your project restore, enhance, or preserve a riparian environment?

e.) How will your project benefit fish and wildlife?

f.) What stewardship benefits will your project provide (e.g. aesthetic, recreational, social,

and/or economic benefits)?

a.) As Cotati is at the headwaters of the Laguna de Santa Rosa, conditions in Cotati directly affect the health of the Laguna de Santa Rosa watershed; impacting water quality and sedimentation, as well as wildlife and invasive species abundance and distribution along the entire 14-mile main Laguna channel to the Russian River. Exotic invasive plants will be replaced with genetically appropriate locally-grown native trees and understory shrubs. This vegetation will reduce water quality impairments in several ways. Riparian plantings will buffer surface run-off, reducing sediment, bacteria and nutrient inputs to the channel. Shade from over-hanging tree canopy will cool water temperature, and reduce aquatic plant growth which together will increase dissolved oxygen levels,

improving aquatic habitat. As this project will primarily be implemented using volunteer labor, it will also lead to improved health of the watershed by raising public awareness and encouraging a sense of community stewardship. Outreach and education techniques developed in the course of this project will inform volunteer recruitment activities throughout the area.

b.) The project will reduce potential flooding by removing large areas of Himalayan blackberries that are choking the waterway. Riparian restoration will reduce future maintenance by creating a canopy to shade vegetation out of the creek channel. Native plants will stabilize the bank and reduce sedimentation in areas at risk of erosion. Sedimentation is the leading cause of flooding in the Laguna, based on the 2004 report: Sediment Sources, Rate & Fate in the Laguna de Santa Rosa, by the U.S. Army Corps of Engineers.

c.) Clearing invasive species and trash from the channel will improve its hydraulic function, moving water out of urban areas during large storm-events, thus improving local flood-control. Restoration to reduce erosion and sediment inputs will reduce flooding throughout the Laguna de Santa Rosa system.

d.) Decades of development preclude restoration to a previous historic state. Rather, the goal of the project is to restore environmental values and ecosystem functions. This project will provide a significant enhancement and expansion of riparian habitat where it does not currently exist. Our planting list maximizes biological diversity by including as many appropriate riparian species as are commercially available.

e.) The proposed project will improve water quality for seasonal fish populations. It will also benefit wildlife by creating habitat and providing food plants for resident and

migratory birds, and for small animals and insects, including butterflies and dragonflies. The installation of nesting boxes will increase the population densities of cavity-nesting birds. The tree canopy will eventually shade and cool the water, improving water quality by reducing erosion, buffering pollutants, and lowering bacteria levels in the water, which will also be beneficial for wildlife. In a later phase of the project, we hope to enhance local habitat values for the western pond turtle.

f.) The project will provide aesthetic, recreational, social, economic and educational benefits to the local community. There is a bicycle path alongside the project site stream channel, which is well-used by pedestrians, dog walkers and bicyclists. Many private residences lie adjacent to the stream, including houses, apartments, and low-income units. Two public parks, a ball field, and an elementary school also lie adjacent to this section of the stream. The entire reach is visible, accessible, and well-used by local residents. As part of the proposed project, we will initiate educational outreach programs into the local community, to raise awareness of local residents' impacts on the stream and the local environment. We hope to inspire residents to reduce the use of pesticides and to increase backyard native plantings, enhancing wildlife habitat while encouraging water conservation. We also anticipate that this educational program will reduce the dumping of trash and pollutants into the creek. We will use this as an opportunity to raise awareness of the hydrological cycle, links to the Laguna de Santa Rosa and the Russian River and the quality of our drinking water supplies Property values in the residential areas adjacent to the creek will be increased because the planting of trees and shrubs will create a much more aesthetically pleasing environment with reduced risk of flooding. A

degraded flood control channel will be transformed into a pleasant walkway along a healthy creek for bicycling and walking through town.

Describe how your project relates to the larger flood protection picture, including the following elements:

Will your project fully treat the problems at the project site? If not, please briefly describe the scope and funding needs of other similar projects or phases that would be appropriate to fully address these problems.

The urbanized Cotati reach of the Laguna is approximately three miles long, from the headwaters of the Laguna to its junction with Copeland Creek. The main tributary to the Cotati Reach is Cotati Creek, part of which is a concrete channel. While the project will fully treat the problems at the 5,000 ft. project site, there are several potential projects or phases that we would like to see implemented in the future:

i.) There is great potential for habitat enhancement, contributing to better flood and erosion control, along the Laguna channel west of Highway 101 to its confluence with Copeland Creek. This is a mile-long industrial zone with a wide set-back and room for planting native trees and shrubs along both banks of the creek. It is not as actively used as the areas we are considering for the current project, but has been designated as a "greenway" in the Sonoma County Agricultural Protection and Open Space District Aquisition Plan 2000 and would lend itself to a park/trail project linking to other trails in the main Laguna area. This project would be relatively inexpensive to implement (primarily re-vegetation and invasive species removal), without large permitting requirements.

ii.) There have been a few reports of western pond turtles in the Cotati Reach over the past few years, and there is anecdotal evidence that a decade ago they were much more prolific here. In a future project phase we plan to enhance habitat for the western pond turtle in a way compatible with flood control measures, and to make this our target species for habitat restoration. This project would require a substantial research and planning effort prior to implementation, and likely require permits by the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers.

iii.) A future phase will include an assessment and restoration plan for Cotati Creek, compatible with flood control and maintenance requirements.

iv.) We plan to continue to expand our educational and outreach programs, partnering with other environmental organizations such as the Bay Institute and the Laguna de Santa Rosa Foundation to reach school children, churches and community groups.

8. Describe the community support for this project:

a.) Does your project enjoy broad-based community and institutional support?

b.) How does your project incorporate participation of local agencies and citizens groups in project planning, design, or implementation? Include community/local agency involvement and their roles and work completed on the project to date.

c.) Discuss any demographic, social, and/or cultural issues that are important to the local community and that will influence design, implementation, and maintenance of the project. Describe the importance of the project site to the local community.

a.) The project has broad-based community support. It is supported by the City of Cotati, the City of Cotati's Community & Environment Commission, the Sonoma County Water Agency, and the Bay Institute, as well as other environmental groups. Volunteers from the local community have included school children, students from the Santa Rosa Junior College and Sonoma State University, as well as local residents of all ages.

b.) Cotati's Community & Environment Commission (CEC), a volunteer commission of Cotati City Council, organized the first Cotati Earth Day in 1991 and in 1995 they hosted the first Cotati urban stream clean-up. In 1999 the Cotati Creek Critters, an ad hoc citizens' group, worked in conjunction with the CEC to hold volunteer workdays once a month, from October to April. These have been ongoing ever since, including Fall and Spring Earth Days, with relevant educational slide show presentations held in Fall 2002 and 2003, with direct involvement and support by the CEC. The City has supplied an outlet for water for irrigation, provides refuse/recycling/green waste services, free compost, administrative support, use of tools and other in-kind services, and use of a city notice board and banner for publicity. The Sonoma County Water Agency has employed supervised adult crews to remove blackberry, has drilled holes for tree planting, and has provided trees. Trees have also been supplied by Sonoma County Jail Industries, and Circuit Rider Productions, Inc. Over 200 trees have been planted to date, in addition to a large number of understory shrubs. LandPaths is currently working with the Sonoma County Water Agency on graphic designs for interpretive signs which will be used in other waterways in the county and could be used as a template for signs in Cotati. We hope partner with the Bay Institute to engage local schools in the project.

Monthly workdays, held regularly since 1999, typically attract 8-15 participants, and Spring and Fall Earth Days have attracted up to 60 volunteers, including school children. At our January, 2005 workday, volunteers ranged in age from 7 - 65. Students from Sonoma State University, Santa Rosa Junior College, and local schools, have volunteered, and collaborated on projects. Approximately 40 children from the synagogue Congregation Ner Shalom have taken part in a creek clean-up project and look forward to doing more. The local Scout troop and the Rohnert Park-Cotati Rotary Club have expressed an interest in future involvement.

In addition to its flood-control and habitat enhancement benefits, this project is intended to expand our community outreach, increasing environmental education and a sense of community stewardship for the urban waterways. We plan to offer presentations and docent-led walks to local community organizations, schools and churches, in an effort to involve local people as participants in every stage of the project, and to reach out to local residents who live adjacent to the stream to involve them and help raise awareness of stream-related issues.

The stream is an important resource for the local community. Most of the Cotati Reach is in residential areas including homes for families with children, and some high density housing. The bicycle path bordering the stream is well-used by pedestrians, bicyclists and dog walkers. Two small and two larger city parks, including a ball field, are adjacent to the creek. An elementary school is located close to the headwaters. Although there are ball parks in Cotati there are few natural areas within walking distance in this small town, and the creek provides the only relatively quiet, natural area of public space within the city limits, with a two-mile walk and bicycle trail. It also has great

potential as a resource for environmental education. There is the long-term potential for the bicycle trail to link into a county-wide network of trails, to the Laguna de Santa Rosa "heartland" to the west and to a possible future bicycle trail along the Northwest Pacific railroad to the east.

What are your plans for long-term management or maintenance of the stream(s) you are managing or restoring?...How will you ensure that the property restored will be maintained as a natural stream? What will you do to evaluate the success of the project?

Long-term management and maintenance of the project will be carried out jointly by our volunteer citizens group, working with the cities of Cotati and Rohnert Park, and the Sonoma County Water Agency, which will continue to oversee infrastructure maintenance. Part of the current project will be to develop a sense of community stewardship and long-term commitment by individuals for maintaining riparian plantings. We will encourage participating community groups to adopt a section of the creek for long term maintenance. Specific maintenance activities will include irrigation, mowing, and weed-control. Plantings will be monitored, staked and replaced as necessary by volunteers. Bird nesting boxes will be monitored and cleaned on a regular basis. During the course of the proposed project, we will develop a formal long-term monitoring plan, utilizing GIS for weed mapping, and plant community surveys. For riparian restoration activities, we will evaluate success according to the survival rate of native plants; the long-term exclusion of invasive plants; the diversity of wildlife, including the use of bird boxes for nesting; and by the numbers of dedicated and long-term volunteers and community groups.

Local contributions to this program will be extensive and broad-based. A majority of the implementation work will be done by an active group of citizen volunteers, who will plant trees, remove weeds and invasive plants, and participate in creek clean-ups. The Sonoma County Water Agency has pledged to provide staff time; supervised adult crews for blackberry removal; labor and equipment for digging tree holes for trees; as well as some tree seedlings, and interpretive signs. The City of Cotati will provide administrative staff time; a secure location for safely storing tools and equipment; working space for a plant nursery; water for irrigation and plant propagation; electrical supply; garbage/yard waste/recycling containers and removal services; compost and mulch; and some administrative help and supplies for public outreach, including use of meeting rooms. The Bay Institute, a non-profit organization specializing in environmental education, has expressed an interest in working with us to engage schools in the program.

a.) The activities proposed in this project should take place as soon as possible to reduce the local risk of flooding, reduce sediment and nutrient loading into an already impaired waterway, and to increase the habitat value of this urban stream. Removing blackberry will greatly increase the hydraulic capacity and flow of this flood control channel, reducing threats to property and other urban infrastructure. Planting trees to stabilize banks and prevent erosion must be done in a timely manner because these require substantial time to mature. Ongoing sediment and nutrient loading from run-off, which would be buffered by these plantings, is thought to contribute to poor water quality downstream in the Laguna system. High nutrient levels exacerbate blackberry growth as

well as the growth of invasive aquatic weeds, which creates flood-control issues downstream.

b.) The funding for which we are applying is to continue and expand the scope of work which has been undertaken on a small scale by volunteers since 1999. The next phase is very important for the continued success of our prior work, especially expanding our outreach and participation of volunteer groups.

c.) This project is innovative for the Laguna de Santa Rosa watershed, in that there is no other creek group performing creek restoration on this scale, using volunteer labor. Our intention to combine outreach and education with the creek restoration project is also innovative, and is being developed through Conservation Psychology research, undertaken by an M. A. student at Sonoma State University, on how to motivate citizens to do environmental restoration. The organizational methods and outreach programs developed here will be used as models for other watershed groups throughout the county.

APPENDIX B

Cotati Creek Critters Outreach Program: Questionnaire

1. Where did you first hear about the Cotati Creek Critters? e.g. water bill, Community Voice, KRSH Radio, flyer (where?), City of Cotati downtown bulletin board, City Council meeting, presentation to community group or school, e-mail group. Please specify.

2. When did you first take part in a Cotati Creek Critters restoration/planting day?

Circle one: 1999-2002 2003-2004 2005-2006

3. How many times have you volunteered on a Cotati Creek Critters restoration/planting day? Circle one: 1-2 times 2-5 times 6 times or more

4. What first motivated you to volunteer with the Cotati Creek Critters?

Please rate on scale of 1-5, 1 = extremely important, 5 = not at all important:

Help the environment

Get involved with my local community

Meet new people

Spend time outdoors

Physical activity

Learn about restoration/native plants

Work with plants

Join in activity with my friends

Involve my children in a local activity

Other (please specify)

5. The Cotati Creek Critters have given presentations to specific groups e.g. Church of the Oaks, Active 20/30 Club, Rotary Club, Rancho Cotate High School Interact Club, Cub Scouts, Frogsong Cohousing Community.

Have you attended one of these events? Y/N

If so, do you have any particular feedback?

6. The Cotati Creek Critters have organized evening events at the Cotati Community Center on "the Laguna de Santa Rosa," "Water," "the Biology of the Laguna," "Creating Wildlife Habitat in your own Backyard," and soon, "Discovering a Sense of Place."

Have you attended one or more of these events? Y / N

Any particular comments or feedback?

Any suggestions for future events or topics?

7. Cotati Creek Critters have led some guided walks along the Laguna in Cotati.

Would you like to see more of these? Yes/No. Preferred day/time?

What topics or themes would interest you (e.g. birdwatching?)

8. What do you enjoy most about working with the Cotati Creek Critters?

Any suggestions for changes you would like to see, or future activities?

9. Any other skills/expertise you could offer? See wish list at

www.CotatiCreekCritters.info

10. What do you think would attract other people to (a) join in (b) keeping coming?

11. Are you active in an environmental group?

12. Are you active in any other local community organization?

Thank you very much for your time!

May I contact you to follow up with a short (10 minute) telephone or personal interview? Y/N

IF Yes, please fill in your name and contact information. If No, please feel free to submit this questionnaire anonymously. I value your response, at whatever level. Thank you.

Name……

Address……. City…….Zip…….

Telephone (day/evening?)……..Email…….

M/F…… Age…….. (For statistical purposes only).

Research by: Jenny Blaker, Outreach Coordinator, Cotati Creek Critters,

and MA student, "Action for a Viable Future," Hutchins School, Sonoma State University. Contact at: jenny@creeks.cotati.info or (707) 792 4422. See www.CotatiCreekCritters.info

SSU Faculty adviser: Dr Debora Hammond (707) 664-3179

Hammond@sonoma.edu

APPENDIX C

Cotati Creek Critters Outreach Program: publicity and media

Electronic media

Cotati Creek Critters e-mail list

Website www.CotatiCreekCritters.info, managed by volunteer Ann Leonard.

E-mail groups: greenaction@yahoo.com, sustainablesonoma@yahoo.com

Sustainable Sonoma County calendar http://www.sustainablesonoma.org

Sonoma State University: Action News http://www.sonoma.edu/ensp/

City of Cotati

Downtown bulletin board

Events hotline (707-765 3939)

Announcements at City Council meetings

Flyers inserted in water bills to every household in the City, September 2005

Flyers posted with City Council notices in 3 locations

Cotati Community Recreation Guide published 6-monthly by Recreation Dept.

Other media

The local newspaper, *The Community Voice*

"The Outsiders," KRSH Radio 95.9 FM, hosted by Wade Belew

The North Bay Progressive (now discontinued)

The Laguna Foundation's newsletter, *Meanderings*

Flyers

Distributed to Cotati businesses, library, etc., the Sonoma State University campus, and mailed to teachers at Santa Rosa Junior College.

APPENDIX D

Community groups, schools, etc. which scheduled presentations with Cotati Creek Critters during the period September 2005 to May 2006.

Burbank Housing

Boy Scouts, Troop 4

Cub Scouts, Pack 4

Church of the Oaks

Congregation Ner Shalom

Cotati 4-H

Frogsong Co-housing Community

La Fiesta School (with STRAW)

Thomas Page School (with STRAW)

Rancho Cotate High School Environmental Club

Rancho Cotate High School Interact Club

Rohnert Park-Cotati Active 20/30 Club

Rohnert Park-Cotati Rotary Club

Santa Rosa Junior College Biology Forum

Sonoma County Water Coalition

Sonoma County Jail Industries (provide trees for the restoration program)

Sonoma State University Environmental Forum

SSU English 201 class

SSU Hutchins School, Liberal Studies 202 class

APPENDIX E

Groups which held volunteer planting days with Cotati Creek Critters during the period October 2005 to May 2006.

Acorn Soupe (with Meadowview School, Santa Rosa)

Boy scouts, Troop 4

Congregation Beth Ami

Congregation Ner Shalom

Cotati Co-op Nursery School

Cub Scouts, Pack 4 – joined Community Planting Day

Cub Scouts, Wolf Den – joined Community Planting Day

4-H – joined Community Planting Day

Frogsong Co-housing Community (2 days)

La Fiesta School (2 classes, with STRAW)

Thomas Page School (3 classes, with STRAW)

Laguna Keepers – joined Community Planting Day

Rancho Cotate Interact Club and Environmental Club – joined Community Planting Day

Rebuilding Together, Rohnert Park-Cotati (2 days)

Rohnert Park Active 20/30 Club

Sonoma State University JUMP group (3 days)

SSU Freshmans Interest Groups (2 days)

SSU Hutchins Liberal studies class

We have held 13 community planting days, and 17 workdays for specific groups. Some groups preferred to join us for regular Community Planting Days.

APPENDIX F

Responses to Questionnaire

1. When did you first take part in a Cotati Creek Critters restoration/planting day?:

1999-2000 = 4; 2003-4 = 8; 2005-6 = 16

3 did not respond, or had seen a presentation but not participated in a workday.

2. Where did you first hear about the Cotati Creek Critters?

A friend or neighbor = 6; knowing Wade Belew or Jenny Blaker personally = 6; via another group = 2; Cotati downtown bulletin boards: by the fire station = 3; by Oliver's Market = 1; *The Community Voice* newspaper = 3, other =1; presentations by CCC to specific groups = 3; KRSH radio = 2; Laguna Keepers = 1; SRJC = 1; SSU = 1

Total = 30. 3 people did not answer this question.

No one mentioned our first major new outreach effort, the flyer inserted with the City of Cotati's water bills to every household in the City in May, 2005!

It appears that personal contact and word-of-mouth is very important, but several people mentioned specific bulletin boards, the newspaper, or the radio, suggesting that people do notice these and it is useful to keep the information "out there." Three people mentioned keeping informed via the e-mail list. Only 3 of those who responded to the questionnaire mentioned having seen presentations to specific groups, but the questionnaires for the most part were not separately circulated to group organizers. The group presentations were in fact an essential component of the Outreach Program, leading to a packed schedule of events other than monthly regular Community Planting Days and accounting for hundreds of new participating volunteers, whose primary affiliation is to that initial group rather than to Cotati Creek Critters (e.g. Church of the

Oaks, Boy Scouts, Cub Scouts, Rancho Cotate Interact Club and Environmental Club, Active 20/30 Group, and others.

3. *How many times have you volunteered on a Cotati Creek Critters restoration/ planting day?*

1-2 times = 10; 2-5 times = 17; 6 times or more = 3

Have not volunteered or no answer = 3

4. *What first motivated you to volunteer with the Cotati Creek Critters?*

I believe the way I worded this question was confusing for some people. I asked people to rate nine different issues on a scale of 1 to 5, with 1 being extremely important and 5 being not at all important. In a few cases, the numbers did not align with written comments, for example someone marking "Learn about restoration/native plants," "Work with plants," and "Get involved with my local community," as 5 (not at all important) wrote elsewhere that s/he was interested in "learning about plant and riparian ecosystems," and "being able to participate in a local group." I verified the correct answers by telephone, and adjusted the figures accordingly.

Bearing in mind that a *low* numerical score reflects the *highest* motivating factor (i.e. a high number of 1 = extremely important, 5 = not at all important), the factors I listed scored in the following order of importance. The number of times these were chosen as first, second, or last choice is also shown in the table below.

Motivating Factors	*Rated on a scale of 1-5*					
	1	*2*	*3*	*4*	*5*	*N/A*
Help the environment	24	4	1	1	0	2
Get involved with my local community	12	14	3	0	2	1
Learn about restoration/native plants	8	10	10	2	0	2
Work with plants	8	10	7	4	1	2
Spend time outdoors	10	6	6	2	5	3
Physical activity	4	7	10	3	3	5
Join in activity with my friends	2	8	4	5	8	5
Meet new people	0	5	11	9	3	4
Involve my children in a local activity	9	2	2	1	1	17

8. What do you enjoy most about working with the Cotati Creek Critters?

Written responses suggest that the combination of working *alongside others* to *improve the environment* in the *local community*, with *visible evidence* of *contributing* to *positive change*, provides an overall experience which is satisfying and enjoyable. 11 comments combined at least two of these elements: "Area where I work, great project for environment, community, and joy of seeing positive change, trees growing over time;" "Opportunity to do something directly positive in our local area;" "Meeting like-interested people, working side-by-side improving and sustaining our environment;" "I like the people. A sense of community. I like working with the plants and earth. I enjoy working with people and kids in the planting;" "Positive attitude, helping community, planting trees;" "Mainly learning about California plants, working with the earth, getting dirty, and the results also being making new friends with similar interests;" "Seeing the variety of folks taking an interest in local environment. Getting some physical fun in sun with friends. Seeing the quick transformation that happens with so many hands at work;" "Being able to participate in a local group and learning about plant and riparian ecosystems;" "Working alongside my neighbors restoring habitat, preserving natural land. Bringing awareness of biodiversity, ecology into the

community;" "It's been satisfying seeing change over time from the group's efforts as I walk around the Laguna. I admire how the 'team' has grown to include so many other groups from the community;" "Well organized, well attended, making a huge difference. I get a big grin on my face every time I walk along the creek – which is about three or four times a day!"

Eight people commented solely or primarily on the environmental impacts:

"Restoring environment to attract wildlife and working/being in a nice outdoor setting;" "Helping to make our watershed a viable part of the local ecosystem;" "Feel like I'm helping my local environment;" "Improving the local environment;" "Improving our local environment" (2);"The opportunity to revegetate;" "I like the work we're doing."

Seven mentioned mainly the people, the sense of community, and/or the sense of making a personal contribution:

"I'm impressed by the number of everyday neighbors and their kids coming out to participate, from teenagers to the elderly. It feels like a real community;" "Major impact that CCC is having in our community, and being involved is rewarding;" "The sense of self-satisfaction and knowing I'm contributing to the community;" "I've liked meeting and working with people I don't know;" "Getting to know neighborhood people;" " Meeting like-minded community members;" "The people."

Three people specifically mentioned learning something new:

"We enjoyed the knowledge that we obtained. We arrived with the preconception that we 'knew' about planting, but learned that we were wrong;" "Very informative. My volunteers enjoy the education;" "CCC has done a great job in educating our volunteers about the creek and how they are personally helping."

"Involve my children in a local activity" was not relevant for 17 respondents but was extremely important for 9, who included both parents and teachers: "Having an opportunity for my children to be involved in doing something that makes a difference;" "It was great to work with kindred spirits to teach kids about things that I love to do;" "I wanted an activity we could do with the kids in our school…[we have worked with] Wade and Jenny three years running. We love their way with the kids, the message of the work they do and being able to help our community;" One teacher commented that of everything the children do, it is activities like these that they remember and that make an impression for a long time.

Some people commented on the organization or logistics of the workday itself:

"Well organized;" "Well set up, and you gave clear explanations of what you wanted done;" "The folks who were directing the work are friendly and flexible and enthusiastic and encouraging;" "It's well organized, there's always something to do, with enough tools for the job;" "The timing is good – long enough to achieve something, but still have time left to do something else for the rest of the day."

Refreshments were specifically mentioned three times as something to provide and to publicize.

Telephone interviews and spontaneous personal comments:

"It's great to give back instead of always being on the receiving end;""I was a cub scout once. It was a formative experience and it was good to have the opportunity to mentor a cub scout today… Who knows where it may lead?""CCC is the only group of this type in Cotati/Rohnert Park doing grassroots community-based, local face-to-face work – it's once of a kind."

Suggestions:

The main suggestions were for: diverse activities; more emphasis on learning about the plants themselves; more social activities. Two people wanted to help more: "Incorporate more diverse activities to choose from, other than planting. What could volunteers be doing to help the project?" "I like it very much. It would be fun to have more planting days or at least ways of getting to help out more often;" "I would like to see more emphasis on the plants themselves, learning about their qualities;" "Would like more training on plants. Unless people actually see what things are coming up – habitat specific plants – environmental concepts are too vague to keep them coming;" "Maybe more neighborhood 'block party' groups;" "Social activities;" "Engage people/volunteers, upbeat, enthusiastic attitude" (Phone – the person felt this was being done, did not have specific suggestions as to how to engage people).

When asked about their interests in either guided walks or evening events, the strongest-stated interests were in learning about different aspects of plants, birds, and other wildlife, and to a lesser extent, wider environmental issues:

" Identifying plants and birds; " "Plant ID and birds;" "Birds and wildlife of local area;" "Native plants and bird ID;" "Bird-watching, natural vegetation/wildlife;" "ID of plants and animals;" "Bird-watching, frogs, other creek critters;" "Flora/ fauna/ geology/ outdoors…cycling?" "Native plant propagation and species classification;" "Plant identification and traditional uses for these plants i.e. medicinal, good for baskets etc." "Wild edibles/medicinals;""Life in miniature – insects, worms, moss and small plants and how it all fits together to create the whole;" "Plant ID and bird-watching, history of the creeks in Cotati;" "Common plant, tree, animal identification and behavior,

endangered species like tiger salamander;" "Western pond turtle habitat;" "Local farmers, CSA's and how purchasing local and organic foods helps the environment, including reducing emissions from transporting food." One person suggested "Perhaps something linking spirituality and nature." People commented that presentations were interesting and informative and one person commented that (as with workdays), "it was neat to see multiple generations in the audience."

In terms of spreading the word, encouraging others to join in and keep coming, comments included:

"Keeping the word out there. Email updates are great. Exhibit to schools, libraries, etc. so more kids/families see the progress and how we can each make a difference;"

"Keeping the bulletins in public places. Jenny's lemon cake!" "More advertisement and mention of food and drink provided also a diverse volunteer work schedule. Personal attachment opportunities with professionals in the field;" "Signage along path noting maintenance or restoration by Cotati Creek Critters and contact info.;" "Tie-ins with other events;" "HS community Service;" "People will return if they have experienced success at the tasks and if the camaraderie is present. Word of mouth about the successful progress and fun should help;" "Advertise in the community in different ways, internet, community bulletin, community board. Make it easy to learn what the critters do and how they do it and keep it casual and fun."