san francisco estuary institute

Grant Writing Guide

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Some basic guidelines for considering
and applying for grants to support
watershed monitoring and stewardship.

Guide to Proposal Development

Disclaimer

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Purpose

This guide is intended to provide assistance to watershed monitoring or stewardship groups preparing grant applications. It provides basic guidance for responding to typical grant guidelines and provides two examples of successful grant applications.

The following document is, however, not intended to substitute for more in-depth training programs offered by nonprofit assistance programs or advisory materials distributed by these agencies.

These nonprofit development and training organizations can offer more detailed and directed assistance to watershed groups preparing to embark on a fund development campaign. A complete list of nonprofit assistance organizations can be found in the *Riparian Station How-To Manual*.

Grants As a Source of Funding

It should be pointed out that funding from philanthropic foundations represents a small percentage, normally less than 10%, (The Foundation Center's *Foundation Giving* report lists foundation contributions for 1994 at 7.6%.) of total funding for most nonprofit organizations. (See also table on the following page.) In 1994, of the total 9.91 billion dollars donated by

Table 1

1994

PHILANTHROPY

Total Giving 1994
$129.88 billion
(Up 2.89% over 1993)

CONTRIBUTIONS (in billions)		CONTRIBUTIONS (as Percent of Total)	
Individuals	$105.09	Individuals	80.9%
Bequests	$8.77	Bequests	6.8%
Foundations	$9.91	Foundations	7.6%
Corporations	$6.11	Corporations	4.7%
Religion	$58.87	Religion	45.3%
Education	$16.71	Education	12.9%
Health	$11.53	Health	8.9%
Human Services	$11.71	Human Services	9.0%
Arts/Cult./Humanities	$9.68	Arts/Cult./Humanities	7.5%
Public/Society Benefit	$6.05	Public/Society Benefit	4.7%
Environment/Wildlife	$3.53	Environment/Wildlife	2.7%
International Affairs	$2.21	International Affairs	1.7%
Unclassified	$9.59	Unclassified	7.4%

Source: American Association of Fund-Raising Council Trust for Philanthropy, Giving USA, 1995

foundations, only 5.1%of the total was allocated for support to environmental, animal, or wildlife groups.

In general, foundations can provide funding for specific projects but rarely provide long term program support or general support (which goes to support general administration).

Ideally, non-profit organizations will have a well-rounded "portfolio" of funding sources including support from individuals (which can include memberships, major donations and bequests), contracts, grants and funds derived from specific fund raising activities. Again, nonprofit assistance organizations can provide advice on diversifying organizational support strategies.

Although derived from a variety of materials, the following guideline draws heavily from a document prepared by Nancy Light for the River Watch Network *entitled Proposal Writing Made Simple* and the Foundation Center's *Guide to Proposal Writing* by Jane Geever and Patricia McNeill.

Know Your Audience

This is perhaps the most important aspect of grant writing - knowing what kinds of projects the foundation has supported in the past and how well your program fits this funding history and their current guidelines. Always depend upon current information regarding the foundation's funding priorities. Foundations often review their funding strategies and can change their priorities. A past history of funding project similar to yours does not necessarily represent their current funding direction.

The best source of information on the history and current funding priorities of foundations can be found in The Environmental Grantmakers Association directories (they have two options, one more comprehensive and expensive than the other; call 1-800-724-1857 for information and ordering). This guide is updated yearly and includes a wealth of information about foundation giving. In the index, funders' priorities for watershed activities are broken down into watershed management, restoration and preservation. Another good source of information is the Guide to California Foundations, a comprehensive listing of foundations located in California (call 415-777-5761 to order). _

If the foundation issues an annual report, application guidelines, or other printed materials describing its program, it is advisable to obtain copies and study them carefully before preparing your proposal. Additional information can be obtained by looking at annual IRS documents (Form 990-PF), which must be filed by each foundation and are public records. These include a list of all grants paid by the foundation in addition to basic data about finances,

officers, and giving policies. Copies of these returns are available for examination at most of the Foundation Center's cooperating libraries (listed in the *Riparian Station How-To Manual*).

In determining whether or not it is appropriate to approach a particular foundation with a grant request, keep in mind the following questions:

- Does the foundation's interest in programs for watershed monitoring and stewardship include the specific type of service or program you are proposing?

- Does it seem likely that the foundation will make a grant in your geographic area?

- Does the amount of money you are requesting fit within the foundation's grant range?

- Does the foundation have any policy prohibiting grants for the type of support you are requesting?

- Does the foundation prefer to make grants that cover the full cost of a project or do they favor projects where other foundations or funding sources share the cost?

- What types of organization does the foundation tend to support?

- Does the foundation have specific application deadlines and procedures or does it review proposals continuously?

The River Network suggests that you be creative when identifying the fit between your organization and a particular foundation. Are there aspects of your program which involve schools (education), potential threats to human health (medicine or epidemiology), environmental justice (social equity), bringing the community together around river or stream (community development, neighborhood planning, public education, democratic process, social equity, etc.)? If your monitoring program fits into a larger framework which a foundation might support, consider how you might tailor your proposal to fit their funding requirements without sacrificing your program's primary goals.

Put Yourself In The Grantmaker's Position

After getting a feel for the foundation's history of funding, try to anticipate how they will respond to your proposal. How can you make your project more appealing, lend it more immediacy, enhance its importance or uniqueness? Remember that grant reviewers must read thousands of grant requests a year.

Your proposal must stand out from all the rest in many ways. In the Foundation Center's *Guide to Proposal Writing*, the authors include a section entitled What the Funders Have To Say and several paragraphs are devoted to how a proposal writer can grab and keep the grant reviewer's attention.

Several important comments include admonitions to:

- not repeat information;

- write clearly and concisely - no "fluff";

- provide a statement of the request, a statement of the need, and a statement of how you intend to meet the need;

- clearly delineate all your important points, while adhering to the Foundation's guidelines.

Proposal Organization

A proposal should always comply with the specific guidelines supplied by the foundation, which do vary. You will find, however, that there are also similarities between guidelines, and that you can begin structuring your proposal using a generic format. Your generic proposal can then be tailored to fit the guidelines of specific grant makers. Do not hesitate to submit requests to

Your first contact with a foundation is likely to be through a 2-3 page letter of intent, sometimes called a pre-proposal, describing your organization and the program that you would like them to fund. The guidelines for a full proposal should be followed loosely in drafting this letter. Remember that your letter of intent provides that all-important first impression of your organization, and decide what you want that impression to be. The "elevator test" is useful here in getting started. I.E., what would you say to someone if you had to describe your organization, its mission, and the project for which you are seeking funding, during one elevator ride? The information that you would highlight in such a conversation is likely to be the same information that potential funders will find most interesting. Begin by putting this down on paper, and then check to see that you are addressing all the questions in the foundations guidelines.

Don't let the limit of two pages fool you into thinking that this won't take a great deal of time. A well crafted letter of intent can provide material that will be useful for cutting and pasting into other documents such as press releases, flyers executive summaries, and information brochures. Spending the time to create a well crafted document will be worth your while.

Components of a Full Proposal

Executive Summary	umbrella statement of your case and summary of the entire proposal. Sometimes this is included in the of the cover letter.	1 page
Statement of Need	why this project is necessary. Sometimes included in "background" section.	1-2 pages
Project Description	nuts and bolts of how the project will be implemented.	2-3 pages
Budget	financial description of the project plus explanatory notes.	1 page
Organization Information	history and governing structure of the nonprofit; its primary activities, its audiences, its services.	1 page
Conclusion	summary of the proposal's main points.	2 paragraphs

A personalized cover letter should be included with each proposal. The content of this cover letter is extremely important. It is sometimes the basis for either further review or rejection. In general, a cover letter should include:

- a statement of the grant's purpose and the amount being requested;

- why you are approaching this funder;

- a mention of any prior discussion of the proposal;

- some mention of the contents of the proposal package, especially if you are including enclosures, such as newspaper clippings, newsletters, maps or brochures;

- a brief description of the project;

- an offer to set up a meeting or provide additional information which might be helpful to the funder in reviewing your proposal.

Statement of Need or Problem

The statement of need can be a tool for educating the reader. Some grant proposals tell the story of how the need was recognized. This draws the reader in. Include factual information and objective evidence whenever possible. This gives your proposal credibility. If you are fortunate, you can conduct a formal needs assessment in advance, and discuss the results in this section. Use this opportunity to demonstrate that your organization fully understands the problems and therefore is in an excellent position to address the need.

Do not make the all-too common mistake of confusing need with method. A good illustration of this mistake is the statement; "The educational program needs a van." No, No, No! The correct statement of need is as follows: "Students attending XYZ education program need transportation from point a to point b on a bi-weekly basis." If you have decided that the most effective, economical and efficient way of providing this transportation is through the ownership and operation of a van, let the reader know how you arrived at this conclusion. Then, the purchase and utilization of the vehicle should appear in your methods section.

Avoid circular reasoning; in circular reasoning, you present the absence of your solution as the actual problem; for example, "the problem is that we do not have a monitoring program on our local creek. The development of a program will solve that problem."

In general, the needs section should accomplish the following:

- provide the facts or statistics which best illustrate the need or problem;

- give the reader hope; the picture you paint should not be so grim that the solution appears hopeless;

- let the reader know whether the need as acute; or is a recurring problem;

- demonstrate your organization's knowledge and understanding.

The Project Description

This section describes the substance of how you will solve the problem. This is your opportunity to convince the reviewer that you've adopted the right approach. This section should have four subsections which cover the following topics:

- Goals - the aims of your program - your goals should address the stated needs in broad terms. Keep in mind that your stated goals should follow easily from the mission of your organization.

- Objectives -specific outcomes of the programs, stated in quantities if possible. Objectives provide measurable or tangible milestones toward the realization of goals.

- Methods - specific activities that will take place to achieve the objectives. This subsection should include the sequence of discrete activities, a time frame for accomplishing these tasks and a final justification for the particular methods chosen.

- Staffing/Administration - in describing the methods you will often discuss the personnel that will be responsible for carrying out specific tasks, emphasizing the positions (specific qualifications should be discussed later, in the "Organization Information" section). Staffing should refer to volunteers as well as staff and consultants.

- Evaluation - this should be factored into a project from the beginning and should not be added on as an afterthought. Including an evaluation plan in your proposal indicates that you take your objectives seriously and want to know how well you have achieved them.

The Budget

The project description provides the picture of your proposal in words. The budget further refines the picture, but with numbers. A well-crafted budget adds greatly to the proposal reviewer's understanding of your project. Make sure that the type of funds being requested (salaries, equipment, contractor fees) are fundable items of the foundation. This should be done well in a advance of proposal development.

Be certain that your budget estimates are as accurate as possible. If you estimate too closely, you may not be able to operate within the budget. Consistently overestimating costs can also lead to problems of credibility with the funding agency. Be realistic about the size of your project and its budget. Since you will likely be including a financial summary of your organization, a red flag will probably be raised if your project is substantially higher in cost than any other project you have undertaken in the past.

For a complex project, you should construct a table (see "example" section). Often you will be approaching several sources to fund the project, and they will want to know what you expect the entire project to cost in addition to the portion that they are funding. In addition to the monetary cost of the project, generate figures to account for in kind donations, including equipment, supplies, and volunteer time (which can be figured according to how much you would reasonably pay to hire someone at the appropriate skill level).

A budget for an extensive volunteer monitoring project is likely to include the

following:

- personnel (remember to include administrative time and data management time in addition to project time)

- office rental and utilities

- office equipment & supplies (including software if needed)

- travel expenses

- monitoring equipment & supplies

- quality assurance costs (e.g., lab costs, training session costs)

- publication (photocopies and printing)

Organization Information

Normally, a resume of your organization should come at the end of a proposal. The inclination is to put this closer to the front. However, many grantwriters recommend that you sell the project first, and then your organization's capability to carry it out.

Keep this section simple and to the point. Summarize some important projects that have been successful, especially ones that are similar to the proposed project. If your organization is new, stress your organization's enthusiasm, support of the community (volunteer and financial contributions) and individual accomplishments of staff, volunteers, or board members.

In two pages or less tell the reader when your organization came into existence; state its mission, being certain to demonstrate how the subject of the proposal fits within or extends that mission; and describe the organization's structure, programs, and special expertise. Discuss your board, their expertise and level of involvement in your programs. Describe the function and extent of involvement of volunteers.

Conclusion

Every good proposal should have a concluding paragraph or two which calls the reviewers attention to the future, after the grant is completed. Because foundations seldom give long term support, they want to know that you have viable plans for continuing the project over the long term.

This section is also a good place to make a final appeal for your project. Briefly reiterate what your organization wants to do and why it is important. Underscore why your agency needs funding to accomplish it. Don't be afraid at this point to use a bit of emotion to win over your reviewer.

Where to Go From Here

Many low-cost training programs covering proposal writing as well as other important nonprofit functions are offered by regional nonprofit assistance centers. The locations of these centers can be found in the *Riparian Station How-To Manual*. If you are located in the San Francisco Bay Area, assistance in fund raising issues can be obtained by contacting the Bay Area Regional Watershed Network at the address below:

> Elizabeth Sawyer, Development Coordinator
> Bay Area Regional Watershed Network
> 1325 S. 46th St.
> Richmond, CA 94804
> 510-231-9539 voice
> 510-231-9414 fax

Another helpful source of information is the *Volunteer Monitor* issue entitled Staying Afloat Financially (vol. 5, no.2, Fall 1993). For a copy, send a self addressed, stamped ($1.78) envelope , 9 x12 or larger, to: The Volunteer Monitor, 1318 Masonic Ave., San Francisco, CA 94117.

Example Proposals

The following successfully funded proposals for watershed monitoring or related activities and the guidelines used to prepare them are presented here for comparison only. Again, it should be stressed that each funding proposal should be carefully matched to the guidelines of a specific funder.

Example Grant Requests
and Foundation
Guidelines

TELLING YOUR STORY: SAMPLE FORMATS

Although the Foundation has broad interests, most successful applications fall into one or more of the following three categories:

1) problem-solving projects,

2) capacity-building efforts,

3) short-term technical assistance.

No uniform proposal format is required by the Foundation. However, in response to requests for advice on content and presentation, we provide these sample formats.

I. Problem-solving projects aimed at testing new methods, resolving regional problems, forming cooperative arrangements among organizations, or implementing other ventures, often with a time schedule.

Many of the Foundation's grants in educational reform, economic development, environmental policy, and public health fall into this category.

Sample Narrative

1. Statement of Purpose: Define the opportunity, problem, or issue to be addressed by the project, and identify the population to be served.

2. Organizational Background: Describe the characteristics of your organization, including mission, history, key leaders, structure, and funding sources.

3. Project Objectives: State the specific expected results.

4. Methods: Specify the activities to be undertaken and the schedule for their implementation and completion.

5. Personnel: Provide the qualifications of project personnel.

6. Evaluation: Describe how you will assess and measure the success of the project.

7. Future Funding: What measures, if any, will be needed to support this project in the future, and how do you plan to secure them? Is future funding from the Foundation likely to be requested?

II. For capacity-building efforts by non-profit organizations, often over several years, to add permanent new program components, improve the quality of program services, or stabilize financial performance.

Often, organizations that deliver services to the Bay Area public make plans for improvement that can be realized only through an investment of resources. A substantial number of the Foundation's grants to health care, human services, and arts organizations fall within the concept of capacity-building.

Sample Narrative

1. Current Organizational Status: Provide a written snapshot of your organization as it exists today, describing your organization's present characteristics, including programming (services and clientele), organizational structure (staff, board, facilities, equipment, and financial resources), and external environment (community needs; relationships to other nonprofit or governmental programs; and societal, economic, environmental trends).

2. Future Position: Provide a snapshot of your organization as you expect it to appear in the future, one to five years from now. How will its program, clientele, and structure be different in the future? What specific objectives and strategies has your organization formulated? If your organization has adopted an integrated plan, you may wish to submit a copy of it instead of original narratives on current status and future position.

How to Apply for a Grant

The David and Lucile Packard Foundation is a private foundation incorporated under California law. We accept grant proposals only from tax-exempt, charitable organizations. We do not accept proposals that benefit specific individuals or that serve religious purposes. In general, grants are not provided for the purchase of computer equipment.

The Foundation most often makes Community grants to organizations that serve the people of San Mateo, Santa Clara, Santa Cruz, and Monterey counties.

The David and Lucile Packard Foundation Annual Report and Program Guidelines are also available at http://www.packfound.org on the World Wide Web.

When to Apply

Members of the Board of Trustees review proposals at quarterly meetings. The following is a schedule of Board meetings and the deadlines for receipt of proposals:

Proposal Deadline	Board Meeting
December 15	March
March 15	June
June 17	September
September 16	December

The Foundation makes every effort to notify an applicant as soon as we receive a proposal. The staff reviews each proposal to determine whether it falls within the Foundation's areas of interest and fits funding priorities. When a proposal matches our criteria, the staff generally meets with the applicant prior to making recommendations to the Board.

In addition to grantmaking, the staff often provides potential network contacts, advice, and other assistance to applicants.

During the review process, staff members may ask various people for information, including the organization's board members, other agencies and grantmakers, clients, and members of the community. If you do not wish us to contact any of these sources, please let us know.

Mail one copy of the proposal to the staff member in your area of interest:

The David and Lucile Packard Foundation
300 Second Street, Suite 200
Los Altos, California 94022

Streams Inventory : For Wise Planning
of Critical Environmental Resources

Background: Streams in Santa Clara County

In California, it is estimated that 98% of the riparian wetlands are threatened or already destroyed. We have allowed industrial, housing and agricultural uses to alter streams. For the sake of convenience, they run through concrete or steel tubes. Stream sides have been scraped bare, then lined with cement or rock. The natural meandering stream is almost a thing of the past.

As the riparian corridors disappear, remnant wild populations of steelhead, coho salmon and Chinook salmon supported in the numerous creeks and small rivers of San Francisco Bay are threatened with extinction. The salt marsh harvest mouse and clapper rail both depend for their survival on dwindling tracts of cordgrass and pickleweed growing along stream mouths.

Creeks are an important component of our watershed systems. These remnant forests support significant biodiversity. They are important in groundwater recharge and for maintaining freshwater flows into San Francisco Bay. Yet, with all the environmental studies and environmental impact reports that have been made, not a lot is known about the role they play in the overall health of our environment.

The first attempt to assess and categorize the remaining riparian wetland habitat in Santa Clara County didn't take place until 1988. Using 1986 aerial photographs, biologists with Harvey & Stanley Associates assigned the vegetation lining the banks of all the county's rivers, streams, and creeks to one of five categories indicating the general health of the riparian community. This method yielded a coarse picture of riparian resources, and its very coarseness made it a weak planning tool.

A number of agencies recognized the critical need for more extensive baseline data on riparian habitats to be used in land use planning. With much of Santa Clara County heavily developed, wise planning of new and changing land use became essential — and in many cases, urgent. But no one agency has jurisdiction over all the streams in Santa Clara County. Coyote Creek Riparian Station came forward to propose collection of this vital data. Thus was born the Stream Inventory Project.

In 1992 Coyote Creek Riparian Station (CCRS), a nonprofit agency, began a pilot study of San Francisquito Creek, funded by the Environmental Protection Agency and the Santa Clara Valley Water District. The purpose was two-fold: (1) to gather field data to assist local and regional planning agencies in decision-making and resource conservation and (2) to test methodologies and protocols of an environmental inventory. The key tool in providing data was the use of volunteers to collect field information. Highly-trained volunteers provided quality data collection at a low cost.

The inventory pilot program is now in the completion stages. Information gathered by CCRS has been entered in a database and is merged into a computerized Geographic Information System to locate data on maps and "layer" information, integrating all data gathered at each of 42 sites along San Francisquito Creek. (Mapping sample attached.)

CCRS has refined its data collection process and is ready to begin collecting data on ten additional major creeks in Santa Clara County including: Stevens, Saratoga, Alamitos, Calero, Guadalupe, Matadero, Adobe, Permanente, Los Gatos, and Coyote and its tributaries.

Objectives – For Wise Planning of Critical Environmental Resources

• Complete a natural resources inventory of ten streams in Santa Clara County within three years.
• Involve 1000 community volunteers in the inventory project.
• Place completed data with appropriate public planning agencies and departments.
• Place completed data with appropriate private and/or nonprofit organizations working on land use, planning, and resource preservation issues.
• Work with agencies and/or organizations in surrounding counties/regions to provide the stream inventory model and assist in startup of other inventories.

How the Project Will Operate
Program Phases:
• Develop protocols, methodologies, and volunteer training procedures. These were completed in the pilot program on San Francisquito Creek.
• Recruit and train volunteers. Recruitment and training will be ongoing throughout the project. Some volunteers will participate on more than one stream team. Some will move to a new stream as one is completed.
• Collect data. Streams and volunteer teams will be phased in over the three-year project with three to four streams in progress at one time. Start dates will be staggered to maximize staff oversight of volunteers.
• Obtain GIS computer software and transfer data to electronic media. Software was obtained during the pilot program. Data will be reviewed and entered as teams collect the data and submit data forms to the stream coordinator.
• Distribute product to appropriate agencies. As each stream inventory is completed, the information will be made available to appropriate agencies.

Date Collection: Data will be collected at a number of evenly-spaced locations. This method was first developed and used widely in Europe and has only recently been adopted in the United States. Data are collected at points spaced 500 meters apart all along the creek.

Stream characteristics will be mapped and information will be collected on water quality, vegetation, fish, reptiles, amphibians, and birds.

Volunteers will gather the data under the direction of staff biologists. Many of these volunteers will bring specialized knowledge to the project.

Source of Volunteers	Area of Expertise
Santa Clara Valley Audubon Society	birds
Bay Area Amphibian & Reptile Society	amphibians & reptiles
California Native Plant Society	vegetation
Cal Trout & California Association of Fly Fishermen	fish

The project is drawing additional volunteers from many sectors, including:
• Student groups from San Jose State University and Stanford University.
• Staff of local public agencies, including water districts, sewage treatment plants, public works departments.
• Teams from Hewlett-Packard Company, Sun Microsystems, Stanford Linear Accelerator.
• Nonprofit agencies, such as Community for Global Awareness, Environmental Action, Committee for Green Foothills.
• Homeowners associations along the various creeks.

Each creek will have six teams of about 10 volunteers per team. Each team will collect a specific set of data. Each creek, for example, will have a bird team.

By using volunteer field workers, the project will leverage the financial investment to achieve maximum results. More than 1000 volunteers will provide over 45,000 hours of staffing-power to gather the field data needed for this project. If these volunteers were not available, and staff had to be hired for data collection, wages and benefits would add at least $500,000 to the cost of the project.

Volunteers not only save the project wage and benefits costs, they help fund the project. Each volunteer who is recruited becomes a member of Coyote Creek Riparian Station. An annual membership contribution is required for liability insurance coverage. To date approximately $4,000 has been raised from field volunteers; an additional $20,000 is anticipated from other volunteers yet to be recruited and those who remain with the project for several years.

Volunteer participation will enhance community involvement in stream protection and wise management. At the completion of the project, there will be hundreds of people in the community who are interested in the creeks. Project volunteers will be joined by those who live, work, and own land along the creeks, and through their participation will become advocates for protection and wise management of riparian habitats in Santa Clara County. This was one of the

positive points which influenced the Santa Clara Valley Water District's decision to fund the pilot project. The District's Board of Directors was pleased to leverage District funding through a strong volunteer component. They also recognized the great value of community involvement.

How Will the Data Be Used?
Once the data is collected and entered into a data base, it will be merged into a computerized Geographic Information System. This allows researchers to locate data on maps and "layer" information, integrating all data gathered at each of the sites along each creek.

The information from this comprehensive system will be used in many ways. By providing the data in a usable electronic form at little or no cost to local agencies, we are more assured that the data will actually be used.

• It will enable government and nonprofit agencies, as well as private landowners to gain the knowledge necessary to protect riparian wetland habitats.

Riparian wetland habitat is one of the most important and productive habitats in the United States. Riparian systems provide habitat for 83% of amphibian and 40% of reptile species native to California. In many areas of the West, 50% of bird species are primarily associated with and/or reach their greatest concentration in riparian systems. Of all mammals in North America, 42% are found in riparian habitats in the Western United States. Many San Francisco Bay fish species are anadromous, depending on healthy freshwater streams for spawning. Without those spawning grounds, their future is in peril. Many species are affected when riparian wetland habitat is changed or destroyed.

• It will allow interjurisdictional watershed planning for stream protection. What happens upstream (perhaps in Saratoga) has an impact downstream (say, in Santa Clara).

• It will allow agencies with multifaceted responsibilities to expand their planning capabilities.

The Santa Clara Valley Water District, for example, is charged with safeguarding the public from flooding by uncontrolled runoff. The agency must also comply with regulatory pressure to protect riparian wetland resources. It is now extremely important to know exactly what critical natural resources are likely to be impacted by flood control activities far in advance of the actual project so that less environmentally damaging alternatives can be thoroughly examined. On the other hand, if loss is unavoidable it is also necessary to know what mitigation alternatives are available.

- It will be used to enhance ground water recharge.

In Santa Clara County the majority of public water (for drinking, commercial and agricultural uses) comes from sub-surface wells. When ground water is depleted through well pumping and not replenished, the land subsides and flooding increases. Santa Clara Valley Water District halted subsidance in 1967 through its ground water recharge program. Natural running streams facilitate ground water recharging; streams that are turned into concrete culverts do not. Most ground water recharge happens along streams in the county.

- It will demonstrate for planning agencies the level of human intrusion that creek habitats and species can tolerate.

For example, it will help parks and recreation agencies to locate trails and other amenities in areas where native plants and animals will not be threatened and where trampling of vegetation makes little difference.

- It will help agencies responsible for monitoring toxic waste dumping by providing them with a map of drainage pipes (some of which may be illegally placed) that dump into the major creeks.

- It will help agencies responsible for monitoring pollution of unknown origin (nonpoint source pollution) by providing them with a map of storm drains that dump directly into streams.

The Process Has Value

Additionally, the process itself is important because currently no volunteer monitoring program in the United States encompasses broad habitat-based monitoring. Most deal with just a few water quality elements or stream invertebrates. This project will break new ground for volunteers in environmental studies, and because of the cost savings connected with this volunteer-staffed project, may influence the number and size of environmental studies initiated elsewhere in California and the United States.

Developing a well-tested volunteer-based natural resources inventory process could yield tremendous leverage in accomplishing the monumental task envisioned by the National Biological Survey agency. CCRS's data collection methods are based on sound scientific protocols which would complement the work proposed by the Survey whose purpose is to inventory and then monitor the entirety of the nation's biological wealth: plants, animals, and ecosystems.

The Environmental Protection Agency Region 9 (California, Arizona, Nevada, and Hawaii) and the California State Water Resources Control Board have accepted

CCRS Stream Inventory Protocols as the standard for volunteer stream inventory and monitoring procedures.

Funding the Stream Inventory
Funding for the pilot project on San Francisquito Creek was underwritten by Environmental Protection Agency and Santa Clara Valley Water District.

Additional funding from these agencies to expand the project is limited. Delaying until governmental funds might become available will mean continued loss of critical riparian wetlands habitat. Once lost it will be difficult, expensive, or impossible to reclaim. There are so few streams left in Santa Clara County that have not been completely channelized that we must act quickly to enable wise management and enhancement of those that remain in a natural or recoverable state. By securing private funding, CCRS will avoid delays and secure the critical data before more habitat is lost.

The Stream Inventory Budget is $884,551 over the next three years. Of that amount, $616,340 represents matching funding provided by CCRS and its volunteers. Santa Clara Valley Water District has pledged $40,000 towards Year One. CCRS will continue to work with Santa Clara Valley Water District to secure funding from them for the second and third years of the project.

CCRS will expand its solicitation of individual donors for this project. Funding goals from individuals are: year 1 - $4,000; year 2 - $6,000; year 3 - $10,000. CCRS is seeking foundation and corporate support in the amount of $268,211 for the remainder of the project expansion.

The Future
Protocols and methodologies have been developed and adjusted in the pilot program. We will now apply the proven protocols and methodologies over the total project.

The Santa Clara County Stream Inventory will be a model for others to follow - from protocols, to computer systems, to volunteer recruitment and management. Alameda, San Mateo and Contra Costa Counties, whose streams also flow into and influence the San Francisco Bay, have already expressed interest in the project. They are anxious to comply with environmental regulations. They are interested in being good stewards of the land and the resources, but often lack the basic information upon which to base planning and other decisions.

Evaluation

<u>Quality Assurance</u>: A Quality Assurance team comprised of staff biologists, team leaders, and outside experts will meet twice each year to review volunteer training and data collection procedures and make any necessary revisions.

Data collection teams will meet annually for training updates and equipment calibration review. Periodic peer monitoring will take place during data collection for each team. For example, a Saratoga bird team will accompany a Stevens Creek bird team at one or more census points. Both teams will perform simultaneous data collections to act as a crosscheck on accuracy and team members' technical capability.

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Summary

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Coyote Creek Riparian Station
Stream Inventory
Appendix

HISTORY

The Coyote Creek Riparian Station began in 1982 as a field station for the study of migratory land birds. Under the direction of Dr. L. Richard Mewaldt, Emeritus Professor of Zoology at San Jose State University, the Station became a nonprofit research institution in 1986.

With a small staff and corps of well-trained volunteers, Dr. Mewaldt established programs focusing on the mission of the organization. An important component has been a long-term, monitoring program for wildlife that frequent the streams and creeks of Santa Clara County. Repeated and systematic censusing tells which species utilize that habitat. Live capture, measurement, and release techniques enable us to determine species' health and success.

Since its establishment in 1982, CCRS's research has expanded to encompass the entire riparian ecosystem while maintaining a focus on long-term wildlife population monitoring and habitat restoration.

PROGRAMS - those marked with an asterisk (*) are fully funded by contracts

Bird Banding -
• Birds are captured live; data is gathered on individual birds - their species, age, sex, weight, wing length, and amount of body fat; permanent identifying leg bands are applied; study subjects are then released at their capture site. CCRS gathers data on more than 12,000 captures annually. As a major West Coast bird banding station, Coyote Creek Riparian Station coordinates with regional and national organizations in making use of the extensive information available from banding studies.

• Coyote Creek Riparian Station developed proprietary software to analyze bird banding records. In addition, the Station is taking a leadership role, in association with the Western Bird Banding Association and the Institute for Avian Populations, in establishing uniform standards for the use of banding as one of the primary tools for avian population monitoring.

Habitat Restoration -
• CCRS has been working with IBM Corporation's Almaden Research Center employees to restore native oak woodland and grassland habitat on its 800 acre site in southern Santa Clara County.

• Native bunch grass and bottomland shrub is being restored along portions of Coyote Creek.

Research Topics -
• Neotropical Migrants - These birds' migratory patterns are being studied to determine the importance of migratory stopover areas to these species which breed in North America and winter in neotropical Central and/or South America.

• Salt Marsh Yellowthroat - This endangered bird lives in the marshes of San Francisco Bay. It is being studied to determine how many remain and where they are located so that they receive proper protection.

• * California Tiger Salamander - A remnant population (believed to have gone extinct in the late 1970s) was discovered at Stanford University. The University asked CCRS to evaluate the effect of a planned student housing development on the salamander's long-term survival. Based on study results, University officials decided not to build on the parcel adjacent to the salamander's habitat at Lake Lagunita. This may be the only remaining population on the San Francisco peninsula. The species is currently under consideration for endangered species listing by the U.S. Fish and Wildlife Service.

Santa Clara County Breeding Bird Atlas -
• The Atlas project is a five-year study of birds that breed and nest in Santa Clara County. Information on individual species and specific breeding activities is gathered (defending territory, copulating, carrying nest materials, nest building, incubating eggs, feeding young, and young leaving the nest). The study will document the status and distribution of all known breeding birds in the county. Data gathering was completed in 1993. Report preparation is underway. Publication is expected in 1995.

Stream Inventory -
• CCRS began a comprehensive study of major creeks of Santa Clara County in 1992 to survey the flora, fauna, water quality, and other stream components. Survey protocols have been established by staff. The majority of the field work will be completed by trained volunteers following strict monitoring procedures and standards. Volunteers are supervised by research staff.

* StreamKeepers -
• With the help of a grant from the Santa Clara Valley Nonpoint Source Pollution Control Program, CCRS is developing guidelines for citizen monitoring and reporting of nonpoint source pollution.

* Wildlife Monitoring -
• For the past seven years (and into the year 2038) CCRS is monitoring wildlife populations in one of Santa Clara County's largest riparian revegetation projects. Information gathering from this pioneering project is assisting biologists from the Santa Clara Valley Water District in designing future riparian restoration projects.

* Wells Monitoring -
• An important factor in determining suitable species to plant in areas to be revegetated is a good understanding of groundwater resources available to prospective plant species. CCRS is gathering data on important groundwater characteristics in areas scheduled for revegetation.

* Reach 1A Monitoring & Management -
• One of the largest artifically created shorebird feeding and roosting ponds ever created in Santa Clara County is being monitored by CCRS staff and volunteers to document the success of the mitigation site.

* Reach 3 Planning & Studies -
• Under contract to a major environmental consulting firm, CCRS is applying what it has learned in planning and design of successful wildlife habitats to a new phase of the Coyote Creek Flood Control project. CCRS staff are helping to guide the installation and monitoring of riparian and wetland mitigation.

PERSONNEL
Governance
Coyote Creek Riparian Station is governed by an eleven-member Board of Directors. The Board meets quarterly.

William G. Bousman, President; Aeronautical Engineer, NASA Ames Research Center, Mountain View, CA

Maryann Danielson, Vice-President; Educator, Sequoia Adult School, Redwood City, CA

Elinor Spellman, Treasurer; Accountant, Corporate Pensions Consultants, Los Gatos, CA

Elsie Richey, Secretary; Retired School Teacher, Hayward, CA

David Blau, Engineering Consultant, D. Blau Consulting, Cupertino, CA

Kindel Blau, Community Volunteer, Cupertino, CA

Craige Edgerton, Financial Planner, Self-employed, San Jose, CA

Dr. Michael Rogers, Aeronautical Engineer, NASA Ames Research Center, Mountain View, CA

Grant Hoyt, Research Technician, Cardio-vascular Surgery Department, Stanford University Hospital, Stanford, CA

Dr. Lloyda Thompson, Facilities Planner, San Jose State University, San Jose, CA

Dr. Scott Terrill, Wildlife Biologist, Division Head for Wildlife, H.T. Harvey and Associates, Alviso, CA

An Advisory Board composed of professionals in related private and academic fields provides advice and counsel when needed.

Dr. Howard Shellhammer, Professor of Zoology, San Jose State University - expertise: experimental design and scientific review

Dr. Howard Cogswell, Professor Emeritus, California State University, Hayward - expertise: ornithology

Dr. Bernard Goldner, Environmental Specialist, Santa Clara Valley Water District - expertise: revegetation design and government relations

Dr. C.J. Ralph, Senior Research Scientist, U.S. Forest Service - expertise: ornithology and ecology

Bette Wentzell, Esq., Attorney - expertise: legal

Staff

Coyote Creek Riparian Station has a staff of one full time and nine part time employees.

Managing Director, Michael Rigney, is a wildlife biologist and former Senior Project Manager with H.T. Harvey and Associates, Ecological Consultants. He currently serves on the Board of Directors of the Western Bird Banding Association and is a former Board Member of Santa Clara Valley Audubon Society. He received his B.A. in Biology from San Jose State University and has done graduate work in Zoology. He co-founded with Emeritus Professor Dr. L. Richard Mewaldt, the San Francisco Bay Bird Observatory and Coyote Creek Riparian Station. He became Director of CCRS in 1990.

Research Director, Dr. Scott Terrill, graduated from University of Arizona and completed his Ph.D. at State University of New York. He did postdoctoral research at the Max Plank Institute in Germany. Dr. Terrill has published more than forty papers on land bird migration. He is currently Senior Project Manager and Wildlife Division Head of H.T. Harvey and Associates.

Stream Inventory Project Coordinator, Chris Fischer, received her B.A. in Environmental Studies for University of California, Santa Cruz. She has worked for Citizen's for a Better Environment as a community organizer, and with the San Jose Conservation Corps as a team leader and trainer.

<u>CCRS Staff (cont)</u>
Elizabeth Sawyer - Administrative Director
Bruce Katano - Biologist
Christopher Otahal - Biologist
Kristin Shields - Banding Biologist
Rita Colwell - Data Coordinator
Karen Cotter - StreamKeeper Coordinator
Mike Westphal - Research Associate
Rich Seymour - Research Associate
Helen Hoa Le - Bookkeeper
Maryann Danielson - Training Director (volunteer)

FUNDING

Coyote Creek Riparian Station's annual budget for 1994 is $225,590. Income is
derived from the following sources:

Foundations	35 %
Corporations	1 %
Individuals	17 %
Contracts	46 %
Interest on investments	1 %

Contracts are for special projects. A nominal amount of overhead expense is
included in each contract.

CCRS has just begun working with a fundraising consultant to expand and diversify
its funding base. A special campaign has just been completed to raise funds to
purchase new modular buildings to house the Riparian Research Lab. The
campaign surpassed its goal by 3%, and all funds were raised from individuals.

Evaluation

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