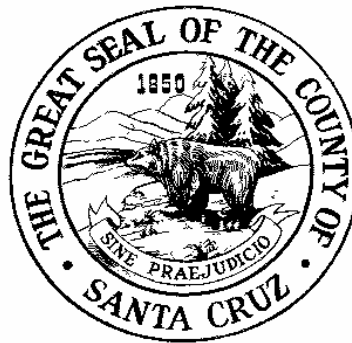
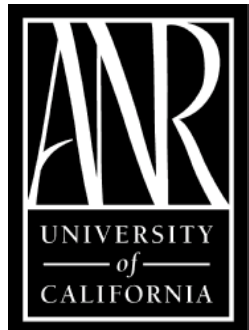

Year 2001 Report
University of California Cooperative Extension
Santa Cruz County



University of California
United States Department of Agriculture
and the
County of Santa Cruz Cooperating



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Our Mission: To protect and improve the resources and quality of life in Santa Cruz County by providing research-generated knowledge and techniques related to agriculture, marine sciences, youth development, nutrition, and family and consumer sciences.

Year 2001 Report
University of California Cooperative Extension
Santa Cruz County

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Introduction

I am pleased to submit this Year 2001 Report for the University of California Cooperative Extension (UCCE) Santa Cruz County. The report includes general information about the department and various programs active in the county. Work accomplished by the academic (advisor) staff is also highlighted in the attached annual reports.

UCCE is a cooperative county, state and federal activity authorized by the Federal Smith-Lever Act. It serves as the link to the Land Grant University System to bring research and education identified as important to county businesses and local residents. It conducts applied research projects in agriculture, environmental horticulture, marine resources, and youth development; provides technical advice and education to farmers, nurseryman, landscapers, and home gardeners; administers the marine science (Sea Grant) and youth development programs, including 4-H; and provides information in the area of nutrition, family, and consumer sciences.

The Division of Agriculture and Natural Resources (ANR) of the University of California provides the professional staff for UCCE Santa Cruz County as well as overall supervision and management of the department. The county provides office space, vehicles, supplies, and administrative support. For every county dollar, federal, state, University and extramural funding sources provide at least two additional dollars. Programs currently active in Santa Cruz County include:

Agriculture and Environmental Horticulture. The largest program in the county is applied research and education in the areas of agriculture and environmental horticulture, which is geared toward solving problems and improving practices of local clientele and industry. Integrated pest management (IPM) strategies, farm management, and the viability of small farms are research priorities. Sudden Oak Death is an important additional research priority. The general public is served admirably through the UC Monterey Bay Master Gardener Program that provides public “gardening” education and problem solving through a telephone hotline and many community outreach activities. Our overall mission is to promote agriculture and environmental horticulture that is environmentally sound, economically viable, and socially responsible to the agricultural and non-agricultural/horticultural communities alike.

Recruitment is currently underway for a new strawberry and caneberry advisor for Santa Cruz County. The advisor will have cross county responsibilities in Monterey and San Benito Counties. This position was originally slated for recruitment and hire during 2001 but was delayed for several months when a hiring freeze for all state supported positions was announced by Governor Davis. We have since received approval to continue recruitment during winter/spring 2002.

In addition to the above programs headquartered in Santa Cruz County, a new water resources/irrigation advisor recently joined the tri-county (Monterey, Santa Cruz and San Benito Counties) academic staff. Although the position is housed at UCCE Monterey County, the advisor has cross county responsibilities to Santa Cruz and San Benito Counties.

Marine Science (Sea Grant) Program. The marine science program conducts applied research and education in the areas of coastal and marine resources within Santa Cruz and Monterey Counties. In addition to applied research and education, activities are focused on the transfer of information to solve practical problems for a wide variety of commercial and industrial businesses as well as recreation, education, and conservation user groups.

Youth Development & the 4-H Youth Program. UCCE was pleased to welcome a new youth development advisor in June 2001. This position supports applied research and education in the areas of youth-related natural resource, science and technology programs in Santa Cruz and Monterey Counties. In addition, this position has oversight for the 4-H youth program, which includes projects and activities that teach responsibility, leadership, teamwork and cooperation to prepare today's youth for adulthood. Hands-on individual and group projects are the training vehicle. The office was also fortunate to welcome a new 4-H program representative, who coordinates volunteer leadership that helps conduct specific 4-H programs. The 4-H program provides young people with skills and information to help them become productive members of society, and promotes family well-being by involving parents in the program.

Family and Consumer Sciences Program. This program provides information to the public at large on a variety of subjects pertaining to human nutrition, food safety, and food preparation and preservation. University research is disseminated to professionals in the health field who seek to serve their own clientele and increase professional growth.

Respectfully submitted,

Laura Tourte
County Director

University Academic Staff

ADVISORS IN SANTA CRUZ COUNTY

Laura Tourte	County Director Small Farm Advisor
Lynn Schmitt-McQuitty	Youth Development Advisor
Richard M. Starr	Marine Advisor
Steven A. Tjosvold	Environmental Horticulture Advisor
In Recruitment	Strawberry Advisor

ADVISORS IN MONTEREY COUNTY WITH CROSS COUNTY ASSIGNMENTS TO SANTA CRUZ COUNTY

Larry J. Bettiga	Viticulture Advisor
William E. Chaney	Entomology Advisor
Janice O. Harwood	Nutrition, Family & Consumer Sciences Advisor
Steven T. Koike	Plant Pathology Advisor
Richard Smith	Weed Science/ Vegetable Advisor
Michael Cahn	Water Resources/ Irrigation Advisor

ADVISORS IN SAN BENITO COUNTY WITH CROSS COUNTY ASSIGNMENTS TO SANTA CRUZ COUNTY

William W. Coates	Tree Crops/ Pomology
Sergio Garcia	Livestock/ Range Science

University Research/Support Staff

Merrilee Buchanan

Staff Research Associate

David Chambers

Staff Research Associate

Mary Cross

4-H Program Representative

Priscilla Partridge

Staff Research Associate

County Administrative Staff

Judy Bettencourt

Division Secretary

Robin Friedman

Clerk II

Relevant Workload Statistics

Master Gardener Members	123
Master Gardener Hotline Hours	864
Master Gardener Project Hours	3,900
4-H Club Youth Members	238
4-H Adult Volunteers	184
Field Days, Workshops & Conferences with Advisors	39
Consultations (Field, Office, Phone, E-Mail)	2,642
News Releases/Mass Media	12
Publications Distributed	756
Newsletters Mailed	14,732

Funding Sources (2000-2001)

University of California and Federal Funds (Direct & Indirect)	\$383,277
University of California Various Donors, Grants & Contracts	<u>286,282</u>
Total University Funds	\$669,559
County Funds (Direct & Indirect)	<u>\$231,784</u>
Total County Funds	\$231,784
Total Funding – University and County	\$901,343
University Funds as a Percent of Total	74%
County Funds as a Percent of Total	26%

STEVEN A. TJOSVOLD

**FARM ADVISOR (100% FTE)
ENVIRONMENTAL HORTICULTURE
SANTA CRUZ & MONTEREY COUNTIES
YEARS IN COUNTY – 19**

PROGRAM DESCRIPTION

The Environmental Horticulture advisor is responsible for the planning and implementation of educational and adaptive research in floriculture, nursery production, turf management, and landscape horticulture in Santa Cruz and Monterey Counties.

The environmental horticulture position helps support an industry with significant local economic impact. Flower and nursery production in the Monterey Bay area exceeded \$290,764,500 in 2000. As evidence of the importance of the area to the California floral industry, the California Cut Flower Commission recently relocated to Watsonville.

California's landscape maintenance and installation industry is booming. It is a multi-billion dollar industry with over 86,000 people employed. The Monterey Bay region is noted for its many beautiful and varied state, county, and city parks and its private gardens that are maintained by professional landscape gardeners. The environmental horticulture advisor serves the professional clientele working in public parks, private gardens and landscapes, and the landscapes of state and local municipalities.

The environmental horticulture advisor helps manage a unique Integrated Pest Management Policy Program with the County of Santa Cruz and supervises the County-funded IPM Coordinator.

The general public is served admirably through the UC Monterey Bay Master Gardener program that provides public “gardening” education and problem solving through the telephone “hotline” and many community outreach activities. The environmental horticulture advisor is the adviser and program manager for this local program.

SITUATION STATEMENT

This Year’s Challenges and Opportunities:

1. Sudden Oak Death

Sudden Oak Death (SOD) is a serious disease on coast live oak and other native species in the forests and woodland in parts of central and northern coastal California. It is particularly serious in some parts of Monterey County (Big Sur), many parts of the Santa Cruz County mountains, and Marin County where it has caused epidemic levels of coast live oak and tanoak mortality. We discovered, in December 2000, infected rhododendrons in a commercial nursery in Santa Cruz County, and now nursery products are implicated as potential sources for long distance movement of the pathogen. In the last two years, there has been a dramatic demand, associated with SOD, for me to respond to the public, professionals, and governmental agencies at the local, statewide, and national levels. In 2001, there has been a concomitant increase in implementation of SOD monitoring and field research.

2. Floriculture and Nursery Industry

The flower and nursery industry is faced with unprecedented international competition, rising energy costs, and pressures to reduce its environmental impact. Educational programs and applied research programs are directed to soften agriculture's impact on the environment in the Monterey Bay Area and to reduce pesticide exposure to workers in a practical and economical manner. Research programs are in place to test alternatives to the soil fumigant methyl bromide used by many ornamental production nurseries. Research programs have been involved with the reduction of conventional pesticides. Educational programs are directed to educate the floriculture and nursery clientele on IPM practices and use of reduced risk pesticides.

3. Santa Cruz County IPM Policy Program

On August 1, 2000 the Santa Cruz County Board of Supervisors approved an Integrated Pest Management Policy and a budget for a full time County IPM Coordinator to be administered through University of California Cooperative Extension in Santa Cruz County. The mission was to develop a scientifically valid IPM program and to implement a County department pesticide policy with a goal of eliminating pesticides. The coordinator was hired January 1, 2001. A Santa Cruz County IPM Policy Department Advisory Group was formed to advise the Board on issues relevant to the IPM policy. Meetings were held with the general public to gain feedback on direction and goals of the policy plan. At the end of fiscal 2000-01 (July 2001), the Board approved the continuation of the contract with Cooperative Extension and full year funding of the IPM Coordinator.

4. Glassy-winged Sharpshooter (GWSS)

An all-out educational effort has been implemented to educate the public in identifying potential GWSS introductions into Santa Cruz County. Associated with the possibility of introduction of GWSS, there are contentious issues related to potential pesticide use to control introduced GWSS. There are two fronts where I have worked: 1) an advisory committee that was initiated by the Board of Supervisors and 2) an industry sponsored committee sponsored by the Farm Bureau.

RESEARCH ACTIVITIES

Integrated Pest Management on Roses

This is a statewide, multi-year, research and demonstration project bringing together multiple disciplines, IPM techniques and methods for the commercial greenhouse cut rose industry. The project incorporates IPM strategies for insect, mite and disease control, with emphasis on scouting, biological control of spider mites, and threshold levels. An alliance of researchers, farm advisors and industry representatives are cooperating on a statewide program to implement a practical reduced-risk pest management strategy. The Department of Pesticide Regulation and USDA funds this project. The project leader is Dr. Michael Parrella, with researchers: Dr. Jim MacDonald, Dr. Karen Robb (UCCE San Diego), Julie Newman (UCCE Ventura), and Christine Casey (UCD graduate student) cooperating.

Development of a Predictive Model and Action Thresholds for Control of Powdery Mildew on Rose

Research with Dr. Jim MacDonald, plant pathologist, UC Davis, Linda Bolkan, UC Davis, and Carla Thomas, an agricultural consultant, will formulate a predictive model for rose powdery mildew. The goal is to develop a useful disease model that a grower can use to predict periods that the environment is conducive for pathogen development. With the development of action threshold levels, a grower could effectively time applications of protective fungicidal sprays.

Development of Non-Chemical IPM Techniques that Minimize Insect Populations in Floriculture Crops

This project seeks to evaluate the effectiveness of sticky tape traps and reflective mulches to reduce pest populations. Sticky tape traps have been used commercially by growers for about two years but there is no scientific evaluation of their effectiveness in significantly reducing pest populations. In addition, reflective mulches have been shown to reduce virus transmission by certain insects, but there is no evaluation on how these might be used by field cut flower growers in reducing pest populations. Julie Newman (UCCE Ventura), Dr. Karen Robb (UCCE San Diego), and Dr. Heather Costa (UC Riverside) are cooperating investigators.

Evaluation of Alternatives to Methyl Bromide in Floriculture Crops

With the impending elimination of methyl bromide in 2005, alternatives to this soil fumigant need to be investigated. Research locally is testing the use of chemical alternatives and solarization for flower and nursery crops. Chemicals being tested include chloropicrin, methyl iodide, Telone, applied through traditional “flat fume” as well as novel “drip” application methods. Dr. Clyde Elmore (UC Davis) and Dr. Jim MacDonald (UC Davis) are investigators, with UCCE Santa Cruz County.

Reduced Risk Nematode Control in Greenhouse Roses

Nematodes can be a serious threat to many greenhouse crops. There is only one nematicide registered for greenhouse use and that product in the field has proven to be marginally effective. Experiments evaluated the efficacy of four reduced-risk pesticides to root-knot (*Meloidogyne hapla*) and lesion (*Pratylenchus vulnus*) nematodes in roses in greenhouse pot experiments. These experiments determined that one product Avid (abamectin) might be useful as a postplant treatment to reduce nematode infestation in roses. Dr. Anton Ploeg (UC Riverside) is principal investigator, with UCCE Santa Cruz County.

Evaluation of Reduced Risk Spider Mite Pesticides and Rose Powdery Mildew Fungicides

Spider mites and powdery mildew are the most important pest problems in greenhouse rose crops and more than 80% of all pesticides applied in greenhouse rose crops are made for these two pest problems. Spider mites and powdery mildew are significant pests in other crops too. Over the last three years, the efficacy of various “reduced risk” miticides and fungicides were evaluated for efficacy and phytotoxicity. This work helps growers make judicious miticide and fungicide choices. Dr. Bill Chaney and Steve Koike, farm advisors, UCCE Monterey County are cooperators.

Sudden Oak Death (SOD) Field Research

Multiple projects emphasize issues and problems relating to oak trees at the urban interface and rhododendron and azaleas that are produced by nurseries and could be moved to other non-affected areas. The environmental horticulture advisor coordinates local work on SOD with the statewide Task Force and the statewide research community.

- ♦ Control of Phytophthora in California Live Oak (Garbelotto, Tjosvold, et. al.)
- ♦ Azalea and Rhododendron (Tjosvold, Koike, Rizzo, Garbelotto)
Host susceptibility; Fungicide control; Native rhododendron occurrence
- ♦ Transmission in water and soil sources (Davidson, Rizzo, Tjosvold, et. al.)
- ♦ Sampling techniques for SOD with ooze exudate from cankers (Tjosvold, Garbelotto)
- ♦ Monitoring SOD in Santa Cruz and Monterey Counties (Tjosvold and Koike)

Integrated Pest Management Policy Program - Santa Cruz County

This project seeks to develop and implement an IPM Plan for pesticide use for Santa Cruz County and includes supervision of an IPM coordinator. IPM Department Advisory Group meetings are held monthly. In addition, research is being conducted with Drs. Desley Whisson and Terry Salmon (UCD); Laura Tourte (UCCE Santa Cruz County), David Chambers (IPM coordinator); and the Department of Public Works to study treatments and cost of chemical and alternative treatments to control gophers on the Salispuedes and Pajaro Levees, Watsonville.

EDUCATIONAL ACTIVITIES & PRESENTATIONS

Problem Solving and Providing Research-Based Information

One important mission of the environmental horticulture advisor is to help solve clients' acute production and pest problems and answer general questions related to environmental horticulture. This could include: identifying pests, diseases, weeds, and post harvest problems and giving the latest research-based recommendations to correct the problem. The advisor disseminates information that will help growers make decisions about buying equipment, supplies, or technology related to the client's business.

CORF(California Ornamental Research Federation)

CORF represents the efforts of many University of California academics working effectively together to meet the statewide educational needs of the floriculture and nursery industry. Planning meetings are held at least four times a year. Members consist of professors, extension specialists, farm advisors, growers, and associated industry members.

Statewide meetings held in 2001 include: Alstroemeria Grower School; Grower Tour and Research Demonstrations; Management Training for Spanish Speaking Supervisors; Container Perennials Grower School; Labor Training; Irrigation Practices to Reduce Runoff; Snapdragon Grower School; Grower Tour to Australia; California Insect and Mite Control Symposium; Frost Control and California Ornamental Disease Symposium.

2001 Chronological Listing of Presentations Extended at Local and Statewide Meetings

- ♦ "UC Master Gardener Program in the Monterey Bay Area"
California Association of Nurseryman (CAN), Monterey Bay Chapter, January 18

- ♦ “Sudden Oak Death In-Service Training”
Scotts Valley, January 24
- ♦ “Basic Botany”, Master Gardener Class
Watsonville, January 27
- ♦ “Diagnosis of Plant Problems”, “Hotline and Policy”
Master Gardener Class, Watsonville, February 24
- ♦ “Sudden Oak Death, an Update”
Ornamental Horticulture Extension Continuing Conference (OHECC)
Riverside, March 21
- ♦ “Sudden Oak Death Training for Agricultural Inspectors”
Organized and presented training in conjunction with Monterey County
Agricultural Commissioners Office. Salinas, April 6
- ♦ “Sudden Oak Death, Monitoring and Diagnostics”
Field tour presentation, Oak Mortality Task Force. Felton, April 25
- ♦ “Sudden Oak Death, Monitoring and Diagnostics”
Field tour presentation for UCCE San Luis Obispo County personnel. Felton, May 8
- ♦ “Sudden Oak Death, an Update”
Santa Cruz County Board of Supervisors Meeting. Santa Cruz, May 22
- ♦ “Evaluation of Reduced Risk Pesticides”
CORF Grower Tour and Research Demonstrations. San Luis Obispo/Nipomo, June 7
- ♦ “Sudden Oak Death- A Threat to the Nursery Industry?”
California Association of Nurseryman (CAN) Monterey Bay Chapter.
Watsonville, June 21
- ♦ “Sudden Oak Death- A Threat to the Nursery Industry?”
2001 Farwest Nursery Show. Portland, Oregon, August 23
- ♦ “Sudden Oak Death”
Big Sur Multi-agency Advisory Council. Big Sur, September 7
- ♦ “Insect Pests on Ornamentals and Sudden Oak Death”
Monterey Peninsula College. Monterey, November 7
- ♦ “Sudden Oak Death”
Big Sur Elder Hostel and Community Meeting. Big Sur, November 13

- ♦ “Sudden Oak Death, an Update”
Salinas Disease Seminar. Salinas, November 16
- ♦ “Rotational Strategies for Pesticides in Major Crops”
“Improving Spray Application Uniformity”
Insect Symposium. Watsonville, December 17

AFFIRMATIVE ACTION

My floriculture colleagues and I have planned and implemented comprehensive, statewide, educational programs to meet the needs of Spanish-speaking growers and farm workers. In the last three years, programs included: insect and disease identification, scouting, pesticide spray application, and management training. For 2001 we initiated a new program for Spanish-speaking supervisors on “Management Training”. For 2002, we are planning a new curriculum on "Diagnosis of Plant Problems". The classes have been well attended and well-received. A clear need has been determined and programs planned to meet those needs.

There was a major push this year for educational efforts on heightening awareness about glassy-winged sharpshooter in hopes that an educated public could aid in the early detection an infestation in Santa Cruz County. One such educational effort was at the Santa Cruz County Fair where I enlisted the help of Lucia Varela (Sonoma County) to produce an educational poster and video on GWSS and Pierces disease. I asked specifically to have the poster produced in Spanish and English text. This, in conjunction with the Spanish publications already produced by Agriculture and Natural Resources (ANR) Communication Services, made an exceptionally nice educational booth at the fair. A training meeting was held for Master Gardeners and the general public featuring Lucia Varela in Watsonville on February 16. Publications in English and Spanish were handed out for further distribution. For 2002, the video and poster will be used for training at local retail nurseries.

PUBLICATIONS

CORF News

CORF (California Ornamental Research Federation) News is a statewide floriculture and nursery newsletter. An advisory committee in 1996 consisting of growers, industry representatives, farm advisors and specialists recommended to establish a statewide newsletter for the floriculture industry. With initial funding from the California Cut Flower Commission and subsequent advertising income, the newsletter was established in late 1997. This publication provides horticulture, pest management and business information from University of California researchers, farm advisors and industry leaders. There are four issues a year and there is no cost to local counties. The readership exceeds 3,000, virtually the entire floriculture industry. The CORF News represents the efforts of many University of California academics working effectively together to meet the educational needs of the floriculture and nursery industry. My responsibility: 1) managing editor (manages salesperson, layout coordinator, and coordinating production and operational leadership), 2) writes in each issue a regional report, field observations, 3) writes and researches information for feature and grower articles.

Scientific Publications

Non-Peer Reviewed

Ploeg, A. and S. Tjosvold. 2001. Lisianthus is a host for root-knot nematodes. *Pacific Coast Nurseryman and Garden Supply Dealer*. September, p.18.

Tjosvold S.A. and S.T. Koike. 2001. Effects of reduced risk and other biorational pesticides for control of powdery mildew on greenhouse roses. *International Cut Flower Growers Association Bulletin*. June.

Tjosvold S.A. S. Koike, W.E. Chaney. 2001. Evaluation of Reduced Risk and Other Biorational Pesticides on Control of Spider Mites (*Tetranychus urticae*) and Powdery Mildew of Rose (*Sphaerotheca pannosa*). *CORF Tour Abstracts*.

Peer Reviewed

Davidson J.M., D.M. Rizzo, M. Garbelotto, S. Tjosvold, and G.W. Slaughter. 2001. *Transmission And Survival Of Sudden Oak Death Phytophthora Species Novus*. Fifth Symposium on Oak Woodland, San Diego, California. Conference Proceedings.

Garbelotto, M., D.M. Rizzo, K. Hayden, M. Meija-Chang, J. Davidson and S. Tjosvold. 2001. *Studies in the genetics of Phytophthora sp. nov. associated with sudden oak death*. Fifth Symposium on Oak Woodland, San Diego, California. Conference Proceedings.

Koike S.T. and S.A. Tjosvold. 2001. A blight disease of dill in California caused by *Itersonilia perplexans*. *Plant Disease*. Vol. 85. No 7.

Newman J.P., K.L. Robb., S.G. Martin, S.A. Tjosvold. 2001. *Evaluating the efficacy of plastic reflective mulches and plant covers in deterring thrips*. Entomological Society of America, Proceedings of annual meeting, December, San Diego.

Other Publications

“Sudden Oak Death Update”, Santa Cruz County Farm Bureau “*Between the Furrows*”, March and October 2001.

"Maintaining Oak Tree Health" for SOD Task Force website (<http://www.suddenoakdeath.org/>).

RICHARD M. STARR

**MARINE ADVISOR (100% FTE)
SANTA CRUZ & MONTEREY COUNTIES
YEARS IN COUNTY – 10**

PROGRAM DESCRIPTION

Marine Advisors in UC Cooperative Extension help identify and solve coastal and marine resource problems. We apply and transfer research information to solve practical problems for a wide variety of commercial and industrial businesses as well as recreation, education, and conservation user groups. Marine Advisor Rick Starr is currently working in four primary areas. He is:

- 1) Developing educational programs regarding marine resources and the Monterey Bay National Marine Sanctuary (MBNMS),
- 2) Helping promote and coordinate marine research and education in this region,
- 3) Providing technical advice and training, and providing leadership to help governmental agencies, environmental organizations, and resource users coordinate coastal resource management plans; and
- 4) Conducting research on rockfish and lingcod distribution and abundance to help promote the wise use, conservation, and management of valuable fishery resources.

SITUATION STATEMENT

The focus of marine and coastal activities in Monterey and Santa Cruz counties is on resource conservation, education, and the development of world class marine research institutions. Tourism, recreation, research, and education are the primary marine related revenue generators in the local area. The existence of the Monterey Bay National Marine Sanctuary, the nation's largest marine sanctuary, provides a backdrop for these activities. Fisheries are less important components of the coastal economy than they were in the past, but still play an important role in the culture of central California.

The focus on resource conservation has brought a greater attention to the need for a high quality marine and coastal environment. The current issues in fisheries revolve around the need to conserve fished populations and improve fishery management while maintaining viable commercial and recreational industries. Other pressing resource conservation issues include the decline in abundance of some non-harvested species, coastal development and habitat loss, degradation of water quality, user conflicts, and a need to maintain recreational opportunities. Additionally, there is a need for coordination of the many research, education, conservation, and recreation groups in this area.

RESEARCH ACTIVITIES

1) Fisheries

A current challenge in fisheries science is to develop a better understanding of population abundances, fish habitat requirements, and resource management alternatives. Fishery

managers need better ways to determine how many fish are available for harvest and better ways to distribute allowable catch. Fisheries research conducted by Rick Starr includes the development of techniques to estimate population structure, habitat requirements, and movements of harvested species. His objectives are to provide fishers and resource managers with information that will allow them to develop better resource management strategies for fishery resources.

Much of Starr's recent work is designed to evaluate the marine reserve concept as a tool for managing fisheries. His primary research in 2001 involved placing sonic tags in lingcod and conducting tracking studies to determine their home ranges. The results of these studies are useful in evaluating and designing marine fishery reserves.

Selected Accomplishments:

In 2001, Starr and colleagues published several papers related to species-habitat associations, techniques for tracking marine fishes, and the use of marine reserves as a fishery management tool. He served as a member of a panel of national scientists who provided advice on the development of marine reserves in California.

Starr is working on a two-year (1999-2001) research project to evaluate the effectiveness of marine reserves to conserve stocks of spawning lingcod. Lingcod provide the basis of an extremely valuable sport and commercial fishery, but populations have declined by 80% in the past 20 years. The project is funded by the David and Lucile Packard foundation and is designed to determine if marine reserves can stem the dramatic decline of lingcod populations on the West Coast of the United States. Starr worked at sea in 2001 to collect data on lingcod movements.

Starr works with graduate students and researchers from the Monterey Bay Aquarium, Moss Landing Marine Lab, and the Pfegler Institute for Environmental Research to develop methods for placing sonic tags on prickly sharks at the head of the Monterey Submarine Canyon. Relatively little information is known about the habitat use of this rare shark and the biotic aspects of submarine canyons with respect to the transfer of organic matter from shallow to deep water. Starr and colleagues tagged and tracked prickly sharks as they moved from very shallow water near the beach to depths of more than 1,000 ft, 5 miles offshore. This work is an example of Starr's efforts to organize a variety of researchers to collect information about species and essential fish habitats.

EDUCATIONAL ACTIVITIES & PRESENTATIONS

1) Central California Coastal Resource Education

For the past two decades, the United States has experienced a well-documented decline in the quality of science education. Mean Scholastic Aptitude test scores have declined for all ethnic groups, gender and racial differences in mathematics and sciences have increased, and as a result, teachers have experienced increasing difficulty maintaining proficiency in science literacy. For this reason, Starr has been working with leading educators, business people,

scientists, researchers, and resource managers in this region to establish a national ocean science camp for children. S.E.A. Lab Monterey Bay is proposed as a model campus of a nation wide network of elementary and secondary residential science programs.

Selected Accomplishments:

Starr is chair of the Board of Directors, and is working with a full time planning director for S.E.A. Lab Monterey Bay. Starr has also worked with colleagues to design a business plan to obtain funds for the official opening of the program in summer of 2002. He spends approximately one day per week on this project.

2) Coordination of Monterey Bay Researchers and Educators

The Monterey Bay area contains over 20 university, governmental, and private research organizations. There are over 1,500 marine scientists working in this region. With a combined budget over 100 million dollars, this group represents a large constituent for the Marine Advisor. Rick Starr acts as a liaison between research and public groups. Starr is also working to help coordinate federal, state, and local management of coastal resources with respect to the MBNMS.

Selected Accomplishments:

Starr is one of the principal organizers of the Monterey Bay Research Symposium. This symposium, held each year, is designed to encourage communication and partnership development scientists, conservation groups, and interested public. Additionally, Starr is a member of several advisory committees for the MBNMS and Elkhorn Slough National Estuarine Research Reserve.

3) Selected Presentations and Outreach Efforts 2001

Evaluation of marine reserves as a tool for conserving lingcod populations.
UABCS lecture series. April 2001.

Tracking Marine Fishes: Solving the Space-Time Continuum.
Moss Landing Marine Lab public seminar series. May 2001.

Prickly Sharks. TV program about my research on deep water sharks
that aired on Animal planet "Shark Gordon" series. May 2001.

Conservation of exploited lingcod stocks: Are marine reserves an effective tool?
Marine Conservation Biology Symposium. June 2001.

CLIENTELE SERVED

Currently, Starr's primary clientele include people from educational and research institutions, environmental organizations, government agencies, and recreational groups. The marine advisory program also receives inquiries and provides information to coastal and commercial fishing businesses.

AFFIRMATIVE ACTION

The university commitment to affirmative action is to make all programs available to any person interested in coastal or marine topics. Although more than 80% of marine users are male, 50% of the people Starr contacted in 2001 were women. Over one-half of his "key" contacts, people from whom he obtains advice and direction, are women. Although Starr's program is in compliance with university affirmative action criteria, he is trying to develop ways to increase cultural diversity among coastal users. One of Starr's long range goals is to try to achieve a greater involvement of Hispanics in marine issues.

SELECTED PUBLICATIONS

Sala, E., E. Ballesteros, R.M. Starr. 2001. Rapid decline of Nassau grouper spawning aggregations in Belize: Fishery management and conservation needs. *Journal American Fisheries Society*. Vol 26. No 10. pp. 23-30.

Starr, R.M. and J. Felton. 2001. *Tracking Marine Fishes: Solving the Space-Time Continuum*. Friends of Moss Landing Marine Labs Newsletter.

Yoklavich, M., Cailliet, G., Lea, R., Greene, G., Starr, R., de Marignac, J., and Field, J. 2001. *Deepwater habitat and fish resources associated with a marine ecological reserve: implications for fisheries management*. Final Report for California Department of Fish and Game Marine Ecological Reserves Program.

LAURA TOURTE

**SMALL FARM ADVISOR (50% FTE)
SANTA CRUZ, MONTEREY &
SAN BENITO COUNTIES
YEARS IN COUNTY – 2**

PROGRAM DESCRIPTION

Small farm advisors in UC Cooperative Extension help identify and work on issues of concern to local small and limited resource farmers. Applied research and educational programs are at the forefront of the effort to provide the local farming community with practically useful information to help problem solving capabilities. Work associated with this program include performing research and providing information to help small, beginning, and limited resource farmers understand the relationship of farm and financial management to healthy, viable agricultural enterprises. More specifically, program activities are being tailored to include information on costs of production, farm profitability, record keeping, alternative practices, and marketing.

SITUATION STATEMENT

In California small and limited resource farmers face more challenges in farming than ever before. Competition from the global marketplace, low and unpredictable product prices, ever more expensive agricultural inputs, and an increasingly complex regulatory environment are but four examples of these challenges. In total, they contribute to a general malaise in the small farm community with respect to short-term profitability and long-term economic viability.

Some growers are able to remain economically healthy by diversifying their crop enterprises and/or product varieties, extending production seasons, selling value-added products such as jams or juice, and finding alternative market outlets. However, many languish because they also lack basic business skills such as record keeping and crop budgeting, which are essential to making informed management decisions. This is true for small and limited resource farmers in the tri-county area (Santa Cruz, Monterey and San Benito) as well. In order to “stay ahead of the curve” and remain economically vital small-scale growers must develop and maintain basic business skills as well as understand the regulatory environment and its implications. In addition, appropriate production techniques and market options for small scale growers must also be understood and developed.

RESEARCH ACTIVITIES

Applied research activities are designed to address the various aspects of farm management that are deemed important or critical to the viability of farmers, especially small farmers, in Santa Cruz County and the tri-county sub-region. This includes costs of production, financial management, and marketing. The proximity of the Monterey Bay National Marine Sanctuary as well as concerns about water quality have moved the practicality and cost of agricultural “conservation practices” into an important component of research needs. Research projects in 2001 included:

- **Costs of Production for Head and Romaine Lettuce in Monterey and Santa Cruz Counties.** Project undertaken in collaboration with the California Lettuce Research Board (CLRB) and UCCE Monterey County. Project completed in March 2001. Collaborators: Ed Kurtz, CLRB; Richard Smith, UCCE Monterey County; William Chaney, UCCE Monterey County.
- **Business Skills Workshops for Small and Limited Resource Farmers on the Central Coast** Project was funded by the California Association of Farm Advisors and Specialists in January 2001; workshops conducted in February and March 2001. Collaborator: Mark Gaskell UCCE Santa Barbara and San Luis Obispo Counties.
- **County Planning and Development Code Constraints: Opportunities for Agricultural and Nature-Based Tourism.** Project was funded by RREA/Small Farm Workgroup in 2000 and is scheduled for completion in 2002. Several surveys were developed to ascertain the opportunities and constraints of agriculture and nature-based tourism for farmers and ranchers in ten counties in California. Collaborators: Ellie Rilla, UCCE Marin County; Holly George, UCCE Plumas County; Roger Ingram, UCCE Placer/Nevada Counties; Glenn McGourty, UCCE Mendocino County; Ramiro Lobo, UCCE San Diego County.
- **Marketing Alternatives for Small-Scale Farmers: A Pre-Feasibility Study of Cooperative Auctions (Phase I)/Small Scale Farmers: A Feasibility Study for Establishment of Pilot Project Cooperative Auctions in California (Phase II).** Two-phase project funded by UC Center for Cooperatives/USDA Rural Cooperative Development Grants in 2001; scheduled for completion in 2002. Collaborators: Mark Gaskell UCCE Santa Barbara and San Luis Obispo Counties; Karen Spatz, USDA-Rural Cooperatives Division. Davis, CA.
- **Water Quality Conservation Practices Project.** Project funded in 2001; scheduled for completion in 2002. Collaborators: Daniel Mountjoy, USDA-Natural Resources Conservation Services; Karen Klonsky, Extension Specialist, Department of Agricultural and Resource Economics, UC Davis.

EDUCATIONAL ACTIVITIES & PRESENTATIONS

As farm advisor, goals for my program include extending practically useful economic and management information to farmers with respect to record keeping, costs of production, and marketing, emphasizing the needs of small, beginning, and/or limited resource farmers. Aside from disseminating information through telephone, e-mail, surface mail and in-person inquiries, I extended knowledge and information as follows.

- Speaker – The Economics and Profitability of Growing Apples. UCCE Santa Cruz County. February 2001. Central Coast Counties Apple Institute. Coordinated by: Bill Coates UCCE San Benito County.

- Speaker - Preparing Cost and Return Studies. Riverside, CA. February 2001. ANR-UCCE Odyssey 2001 Conference. Coordinated by: Karen Klonsky, Department of Agricultural and Resource Economics UC Davis.
- Speaker – Farm Management: The Essentials. UCCE Santa Cruz County. March 2001. Small Farms Workshop. Coordinated by: Laura Tourte and Riesa Bigelow, UCCE Santa Cruz and Monterey Counties.
- Speaker – Record Keeping & Financial Accounting.. UCCE San Luis Obispo County. March 2001. Farm Management and Accounting Workshop. Coordinated by: Mark Gaskell and Laura Tourte, UCCE San Luis Obispo and Santa Cruz Counties.
- Speaker – Production Economics for Head and Leaf Lettuce. Sacramento, CA. March 2001. California Lettuce Research Board Annual Meeting. Coordinated by: California Lettuce Research Board, Salinas, CA.
- Moderator – Marketing Innovations Session. Woodland, CA. March 2001. Partnerships for Sustaining California Agriculture. Coordinated by: UC SAREP, Davis, CA.
- Speaker – Agricultural Education for Community Professionals. UC Davis. March 2001. Agricultural Economics/Farm Management Workgroup Meeting. Coordinated by: Karen Klonsky Department of Agricultural and Resource Economics UC Davis.
- Speaker – Vegetable and Herb Gardening. UCCE Santa Cruz County. May 2001. Full Day Master Gardeners Workshop. Coordinated by: Monterey Bay Master Gardeners. UCCE Santa Cruz and Monterey Counties.
- Speaker – University of California's Role in Developing New Technology. Focus Agriculture Course. UCCE Santa Cruz County. June 2001. Coordinated by: Agriculture. Watsonville, CA. Note: Though prepared, I was unable to deliver this presentation because of a conflict in schedule with jury duty.
- Speaker: Record Keeping and Financial Management for Small Farms. UCSC, Santa Cruz, CA. August 2001. Center for Agroecology and Sustainable Food Systems (CASFS) Apprenticeship Program. Coordinated by: UCSC CASFS, Santa Cruz, CA.
- Speaker – Growth of Organic Agriculture in California. Albuquerque, NM. August 2001. Organic Farming Research and Education in the West - Planning Meeting. Coordinated by: USDA-Western Regional Sustainable Agriculture Research and Education (SARE)Program.
- Panel Member – Small Farm/Organic Research and Extension. UC Davis. October 2001. Organic Farming Research Workgroup Meeting. Coordinated by: Sean Swezey/UC SAREP.

AFFIRMATIVE ACTION

Efforts are made to assure access of knowledge and information to all clientele, including underserved clientele, through various outreach methods including personal contact,

newsletters, announcements and educational workshops. The *Central Coast Family Farm Report* is offered in English and Spanish to make certain that small and limited resource Hispanic farmers have access to this information. Simultaneous Spanish translation services for many workshops are also offered at UCCE. In addition, all articles, announcements and resources are designed and included in the newsletter with all small and limited resource farmers specifically in mind.

PUBLICATIONS

Non-Peer Reviewed

- Tourte, Laura. January – May 2001. *4-H “Green Sheet” Newsletter*. Monthly publication for the 4-H community. Edited and issued in the absence of a Youth Development Advisor.
- Tourte, Laura, January-December 2001. “Ask Laura” Column. Topics included: History/Mission of Cooperative Extension; Food Safety; Agricultural Worker Health and Safety; ANR-UCCE Publications Information; Right-To-Farm Ordinances; Current Status of Organic Farming Regulations; California's Energy Crunch; Backyard Orchard Information. *Between the Furrows*. Santa Cruz County Farm Bureau Newsletter. Contributor.
- Tourte, Laura. January, June, December 2001. *Central Coast Family Farm Report*. Newsletter for the small farm community with contributions from Santa Cruz, Monterey and San Benito advisors. Editor and contributor.
- Tourte, Laura, Richard Smith and William Chaney. 2001. *Costs of Productions for Head (Iceberg) Lettuce – North Monterey and Santa Cruz Counties/South Monterey County*. University of California Cooperative Extension Santa Cruz County. Lead author.
- Tourte, Laura, Richard Smith and William Chaney. 2001. *Costs of Productions for Leaf (Romaine) Lettuce – North Monterey and Santa Cruz Counties/South Monterey County*. University of California Cooperative Extension Santa Cruz County. Lead author.
- Klonsky, Karen, Laura Tourte, Robin Kozloff and Ben Shouse. 2002 (Forthcoming). *Statistical Review of California’s Organic Agriculture 1995-98*. Agricultural Issues Center. University of California. Davis, California. Contributing author and editor.
- Ellen, Rilla, et al. 2002 (Forthcoming). *AgriTourism and Nature Tourism in California: A How-To Manual for Farmers and Ranchers*. Small Farm Center. University of California. Davis, California. Contributor.

**LYNN SCHMITT-
MCQUITTY**

**YOUTH DEVELOPMENT ADVISOR (100% FTE)
SANTA CRUZ & MONTEREY COUNTIES
YEARS IN COUNTY – 1**

PROGRAM DESCRIPTION

This position provides applied research, outreach and leadership in the areas of science, technology, environmental stewardship and natural resource education for youth. Programs will focus on integrating issues related to coastal resources, the environment, and agriculture with human and community development.

Additionally, this position will work with associated organizations involved in youth development and education in Santa Cruz and Monterey counties. Work is also geared towards coordination with other UCCE programs in neighboring counties, and with external agencies.

This position serves clientele in Santa Cruz and Monterey Counties, with the position head quartered in Santa Cruz County.

SITUATION STATEMENT

The University of California Cooperative Extension Youth Development Program embraces multi-disciplinary methods of working with youth in local communities. The major themes or goals of my program are to:

1. Conduct applied research, outreach and leadership in the areas of science, technology, environmental stewardship and natural resource education for youth in Santa Cruz and Monterey counties.
2. Serve as an educational resource by providing local leadership and knowledge of youth development, science, technology, environmental stewardship and natural resource education through collaboration with local youth and community groups.
3. Extend knowledge and information to the Santa Cruz and Monterey County 4-H community club programs and staff.
4. Serve as the liaison between the California State 4-H Office and national youth development programs, training's and opportunities in environmental stewardship and natural resource education.

RESEARCH ACTIVITIES

Since beginning my appointment in June 2001, my current focus has been on assessing needs, establishing relationships, planning, and developing programs to meet the needs of Santa Cruz and Monterey County communities, and setting the stage for future activities.

1. Research and creative activity through conducting applied research, outreach and leadership in the areas of science, technology, environmental stewardship and natural resource education for youth in Santa Cruz and Monterey counties.

▪ *Cooperative Extension Supports Youth Environmental Stewardship.*

I developed content material and resource information for the CREES/NREM Cooperative Extension Supports Youth Environmental Stewardship website (<http://cesyes.nrem.net>) that was launched at the North American Association for Environmental Education Conference in Little Rock Arkansas, October, 2001.

The website materials will provide Cooperative Extension professionals and volunteer leaders with the tools to build their understanding of environmental education concepts, themes, strategies and resources. The website also provides links and information on how local programs can partner with the national natural resources agencies: US Forest Service, US Geological Survey, US Fish and Wildlife Service, Bureau of Land Management, and Natural Resource Conservation Service.

Locally, this information will assist community partners, 4-H volunteer leaders and teens in building their understanding of environmental education and how to utilize these resources at the local level.

▪ *Golden State Environmental Education Consortium, Training Grant Secured.*

I co-authored with members of the Golden State Environmental Education Consortium an Environmental Education Training Partnership Act (EETAP) grant that will be used to conduct state-wide training of bilingual teachers and pre-service teachers on the use of Environmental Education resources and materials. Locally, I will link pre-service teachers at UCSC as well as Santa Cruz and Monterey County teachers who are members of the California Association of Bilingual Education to training and curriculum materials for use in their classrooms.

▪ *California Plan For Environmental Education*

As a member of the Golden State Environmental Education Consortium, I am part of the team working with the State Department of Education on developing state standards for Environmental Education. Thirteen listening sessions were held around the state this spring which brought together community stakeholders to look at the needs, issues and focus of Environmental Education in California. A draft of the California Environmental Education plan is now available for comment, before the final document goes before the Education Department standards group. As a result of these focus groups, a need to implement and train Environmental Education providers on evaluation tools and techniques has evolved. The committee is now critiquing some national evaluation models to be considered for training and implementation. Information from this group will be used to inform my program delivery, implementation and evaluation.

2. Research and creative activity serving as an educational resource by providing local leadership and knowledge of youth development, science, technology, environmental stewardship and natural resource education through collaboration with local youth and community groups.

- *Santa Cruz & Monterey County Conversations on Youth Development. October 2001.* Needs assessments were conducted in Santa Cruz and Monterey Counties with community youth development collaborators from 4-H, Girl Scouts, County Health Department, Migrant Education, City Recreation and Park District, YWCA and the County Work Force Investment Board.

Participants from the needs assessment collaborated to address what UCCE and the youth development program can do to strengthen and or develop programs that contribute to:

- developing the Power of Youth
- providing access, equity, and opportunity to programs
- developing good educational experiences to build strong communities
- attracting, training, supporting and rewarding dedicated youth volunteers
- implementing effective organizational systems

Initial indications from the needs assessments speak to developing science and technology programs for girls, better education utilizing the natural environment, provide better access to programs and further training for volunteers and staff. Further evaluation will be conducted and used to drive the development of my applied research and creative activity.

3. Research and creative Activity through extending knowledge and information to the Santa Cruz and Monterey County 4-H community club programs and staff.

- My focus during this reporting period has been on developing training, reporting and accountability systems for the community club program, and to train the 4-H Program Representatives in both counties on program policy.

As a result, volunteer leaders in Santa Cruz County now have a constant “go-to” person for 4-H community club information and program support. New clubs are developing, enrollment is increasing and accountability and reporting procedures are in place. In Monterey County, consistent support and information regarding program policy is being provided to the Program Representative for dissemination to clientele, and reporting and accountability procedures for staff are taking place.

4. Serve as the liaison between the California State 4-H Office and national youth development programs, training’s and opportunities in environmental stewardship and natural resource education.

- *Wildlife Habitat Evaluation Program Training, Pollock Pines. October 19-21, 2001*

Myself, along with three other members of the California WHEP steering committee provided an intensive hands-on training for 19 participants on the WHEP. The weekend training launched the new statewide program and provided opportunities for youth and adults to learn about wildlife management practices, conducting on-site investigations to identify appropriate management techniques, building understanding of environmental and wildlife concepts, as well as providing opportunities for career exploration and community service.

Concepts from the WHEP program will be integrated into programs in Santa Cruz and Monterey County in order to address important local issues such as the preservation and protection of natural resources, and agricultural sustainability and literacy.

EDUCATIONAL ACTIVITIES & PRESENTATIONS

1. Extending knowledge and information in the areas of science, technology, environmental stewardship and natural resource education for youth in Santa Cruz and Monterey counties.

- *National 4-H Council Environmental Stewardship Vision Planning, June 15, 2001.*

Participated in a National 4-H Council planning session facilitated by Sarah Cahill, the National 4-H Council Environmental Stewardship Program Manager to identify program goals, direction and partners for up-coming environmental stewardship programs with National 4-H Council. As a result, I am now connected to nation-wide environmental stewardship programs, events and activities that can be implemented on a local level.

- *Cooperative Extension Supports Youth Environmental Stewardship Symposium, North American Association for Environmental Education Conference. October 15, 2001*

Was part of a panel that presented a three-hour symposium to 21 environmental educators about the work of CES-YES and the resources we are developing to connect cooperative extension educators to EE materials, resources and partners. Locally, this information will assist community partners, 4-H volunteer leaders and teens in building their understanding of environmental education and implementation of these resources at the local level.

- *National 4-H Council Environmental Stewardship Programs, North American Association for Environmental Education Conference. October 15, 2001*

Assembled a resource guide that identifies the types of Environmental Education resources and programs being conducted by UCCE faculty and staff. The three hour interact session allowed participants to engage in conversation, view curriculum and network in the hopes that new partnerships will be developed and that California UCCE curriculum and programs will be implemented in other states, as well as expanded to other counties within California.

2. Extend knowledge and information by serving as an educational resource by providing local leadership and knowledge of youth development, science, technology, environmental stewardship and natural resource education through collaboration with local youth and community groups.

▪ *Adolescent Development Training, Fresno. June 1, 2001*

I was part of a team that presented an eight hour session on the ages and stages of youth development and the experiential learning cycle to 4-H youth development staff and volunteer leaders. The program provided hands-on experiences that will aid staff and volunteer leaders in the development and delivery of programs for various age groups.

▪ *Monterey County Farm Day, Monterey. October 25, 2001*

Provided an informational booth at the County Farm Day where 21 third grade teachers and 400 students learned about 4-H and its programs. The goal of the event was to introduce teachers to curriculum and program resources available to them through UCCE. Follow-up letters were sent to each teacher to encourage classroom visits and on-going program development.

3. Extend knowledge and information to the Santa Cruz and Monterey County 4-H community club programs and staff.

▪ *Santa Cruz County 4-H Community Club Leader Training, Watsonville. July 26, 2001*

I presented a three-hour training on reporting policies and procedures for 4-H Community Club Leaders, therefore providing them with the reporting tools and expectations for the 2001-2002 4-H year. The goal of this training was to alleviate last minute reporting requests, to clarify expectations and to establish a well-defined time line for collecting materials.

▪ *Personality I.Q. Workshop, State Leadership Conference. August 11, 2001*

I was part of a team that presented two 90-minute sessions on Personality I.Q. at the State Leadership Conference. The goal of this session was to provide teens with an opportunity to identify their own personality types, and to draw conclusions on how to work with others who have different personalities.

▪ *Monterey County 4-H Community Club Leader Training, Salinas. September 9, 2001*

I presented a ninety-minute session to volunteer leaders on the ages and stages of youth development. The session provided volunteers with an opportunity to explore differences and similarities in the youth we work with, as well as opportunities to develop teaching and organization strategies for working with them.

4. Serve as the liaison between the California State 4-H Office and national youth development programs, training's and opportunities in environmental stewardship and natural resource education.

- *Wildlife Habitat Evaluation Program (WHEP), State Leadership Conference. August 12, 2001*

I was part of a team that presented two 60-minute sessions on the Wildlife Habitat Evaluation Program. The session introduced young people to the major components of the WHEP, engaged them in hands-on lessons from the program and provided them with information on how to participate in the program.

AFFIRMATIVE ACTION

As I begin to develop programs, I am committed to implementing outreach efforts to ensure nondiscrimination in program identification and delivery. Program delivery and implementation will promote and encourage maximum participation of minorities, women and other under-served or protected groups. Affirmative action will be included in my program outreach objectives as well as a component in planning, implementing and evaluating program efforts. Current statistical data pertaining to populations served and to be served by programs will be maintained and considered for program development and implementation.

For the conversations on Youth Development for Santa Cruz and Monterey Counties, specific organizations were invited to attend this event to ensure a diverse cross section of the population. Specifically, invitations were sent to: Formal Educators, Faith-based organizations, Youth-based community groups and Science/Environmental-based organizations.

PUBLICATIONS

Non-Peer Reviewed

Monroe, Martha C, Schmitt-McQuitty, Lynn. (2001). Say Yes To Youth Environmental Stewardship. *CESYES Website*. <http://cesyes.nrem.net>.

Schmitt-McQuitty, Lynn. (2001). Working with Environmental Education Partners and Collaborators. *CESYES Website*. <http://cesyes.nrem.net>.

Schmitt-McQuitty, Lynn. (2001). "Ask Lynn": Working with six to eight year olds. *Between the Furrows*. Santa Cruz County Farm Bureau Newsletter. August 2001. Volume 25. Issue 8.

Schmitt-McQuitty, Lynn. (2001). "Ask Lynn": Working with nine to eleven year olds. *Between the Furrows*. Santa Cruz County Farm Bureau Newsletter. August 2001. Volume 25. Issue 8.

Schmitt-McQuitty, Lynn. (2001). "Ask Lynn": Working with twelve to fourteen year olds. *Between the Furrows*. Santa Cruz County Farm Bureau Newsletter. August 2001. Volume 25. Issue 8.

University of California Newsletters

4-H "*Club Notes*". 2001. Editor and Contributor. Monthly Santa Cruz County 4-H community newsletter. June – October.

4-H "*News Notes*". 2001. Contributor. Monthly Monterey County 4-H community newsletter. June – October.

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