Southern San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition Four Year Guadalupe Settlement Fund - Grant Summary[1]

EXECUTIVE SUMMARY AND GRANT ACCOMPLISHMENTS

In 2003, the Central Coast Regional Water Quality Control Board (RWQCB) granted $658,102.93 to fund a Watershed Coordinator position for the Southern San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition (The Coalition) for five years. The Coalition was comprised of five grower trade organizations: Central Coast Wine Growers Association, Santa Barbara County Farm Bureau, Grower Shipper Vegetable Association of Santa Barbara and San Luis Obispo Counties, Santa Barbara Cattlemen's Association, and the Flower and Nursery Growers Association of Santa Barbara County. The Coalition Board of Directors was composed of volunteers who had a strong interest in water quality issues. The Coalition's Mission Statement was: "The San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition represents five agricultural entities in development and implementation of voluntary, cost effective, producer-directed programs to protect and enhance water quality in the Santa Barbara and Southern San Luis Obispo County watersheds."

RWQCB's initial investment in The Coalition was to hire a Watershed Coordinator to assist landowners in the Project Area "to form watershed working groups, attend water quality short courses, develop individual management plans, and implement and monitor progress of the plans.

The July 19, 2003 RWQCB Staff Report indicated the need to have a Watershed Coordinator to address the following issues: ° Total Maximum Daily Loads, ° Central Coast Ambient Monitoring Program, and ° the Conditional Ag Waivers for Irrigated Lands (Ag Waiver). The Coalition Coordinator was hired in late June, 2004. Tasks that were established by the grant were: Grant writing and fund leveraging, Contract development - progress reporting and invoicing, Fulfilling the Guadalupe Settlement Fund Blueprint, Meeting facilitation between diverse groups, Organizing current working groups, Creating new working groups, Facilitating Farm Water Quality Planning Short Courses, Tracking grower progress and doing followup, and Identifying gaps and removing road blocks to management practice implementation.

During the course of the five year grant (2003 -2008), the Coordinator accomplished the following:

- Participated in 23 Farm Water Quality Planning Short Courses which more than 616 growers attended.
- Participated in 1 Rangeland Water Quality Planning Short Course. 16 ranchers attended.
- Assisted more than 28 growers with writing Farm Water Quality Plans.
- Personally assisted more than 400 growers with questions related to Conditional Waiver compliance.
- Hosted 41 meetings that more that 450 growers attended. More than 70 hours of RWQCB water quality continuing education hours were approved for these meetings.
- Attended over 27 Watershed Working Group Meetings in 6 watersheds: Santa Maria, Oso Flaco, Carpinteria Creek, Rincon Creek, Los Alamos, and Pismo/Edna Valley.
- Created and mailed 35 mailers to more than 1300 growers per mailer. Water quality and management practice information, education schedules, and regulatory compliance information were provided.
- Made presentations at over 40 meetings hosted by technical partners or agricultural affiliations.
- Participated in 79 advisory committee meetings related to water quality education, outreach and research.
- Facilitated over 75 meetings related to the organization of Central Coast Water Quality Preservation, Inc., facilitation of its grower advisory committees or the initiation of the Cooperative Monitoring Program.
- Assisted the Central Coast Cattlemen in writing of a Grazing Lands NPS Approach.
- Co-sponsored and organized the 2007 Co-management of Water Quality and Food Safety Conference
- Organized the 2007 Carpinteria Valley Land to Sea Tour
- Applied for over $1,509,281.80 in grants and was awarded $430,093.00
- Garnered an additional $60,452.20 in third party contracts with Central Coast organizations.
- Exceeded the Guadalupe Settlement Funds grant contract's match requirements of $438,735.29.
- Acted as a liaison for agriculture though activities listed above as well as hosting the Coalition Council, attending Santa Barbara Community Action Network, Southern California Wetlands Recovery Program Network, and the Dunes Collaborative meetings.

[1] Prepared by Kay Mercer, Watershed Coordinator

PROJECT AREA

Description

Santa Barbara County possesses about 2,737 square miles. Approximately 750,000 acres are zoned for agriculture [1] Roughly 114,769 acres are in irrigated crop land [2] and 490,000 acres are in grassland and/or hardwood woodland [3]. It is a difficult to characterize the geography of San Luis Obispo County portion of the Project Area as it is only about 30-40% of total area of San Luis Obispo County. Therefore, information will be presented here for the entire county. SLO County is composed of 3,304 square miles [4]. There are about 127,511 acres in irrigated land production [5] and 1,416,000 acres of grassland and/or hardwood woodland. [3]

The Project Area of southern San Luis Obispo and Santa Barbara Counties is comprised of approximately 1500 growers and it is unknown, at this time, how many grazing operations there are.

There are 135 watersheds in Southern SLO and Santa Barbara Counties [6]. Each watershed is unique and presents unique management challenges. Therefore, for the sake of grant expediency, RWQCB directed The Coalition to focus its efforts on four priority watersheds: Santa Maria River, Oso Flaco Lake, Carpinteria Marsh Watershed, and Carpinteria Creek Watershed.

Grower Demographics

In Santa Barbara County, the average farm size (irrigated and non-irrigated farms) is about 524 acres [1]. However, 60% of all farms have less than 50 acres. Farm distribution is as follows [7]:

Number of Farms and Acres of Irrigated and Non-irrigated Farmland by Farm Size, 2002			
Size Category	**Number of Farms**		**Acres of Farmland**
1 – 9 acres	463	32%	1549
10-49 acres	417	28%	9,198
50-179 acres	236	16%	23,264
180-499 acres	123	9%	37,022
500-999 acres	66	5%	44,923
1000 acres or more	139	1%	640,981
Total	1,444		756,937

In SLO County, the average farm size for irrigated and non-irrigated farms was 568 acres [4]. These data are supported by a 2007 survey of irrigated Ag growers in both counties. The overall average operation size is 365 acres and 50% of the operations had less than 35 acres and only 10% had more than 1000 acres [8].

The average value of all crops sold per farm in Santa Barbara County was $496,715.00. However, an average does not truly reflect farm income distribution as is shown below [7]:

Number of Farms and Sales, 2002				
Sales Volume	**Number of Farms**		**Sales**	
< $1,000	301	2%	$36,000	<1%
$1,000 - $49,999	631	44%	$7,913,000	1%
$50,000 - $99,999	90	6%	$6,587,000	<1%
$100,000 - $249,999	124	9%	$18,998,000	2.6%
$250,000 - $499,999	99	7%	$33,526,000	4.7%
>$500,000	199	14%	$650,197,000	91%
Total	1,444		$717,257,000	

The average value of agricultural products sold per farm was $170,712 in SLO County [4]. These data were verified through a grower survey of irrigated Ag growers in both counties: 38% of respondents reported earning less than $49,000 in annual GROSS agricultural income, while 15% earn over $1,000,000. [8].

In 2007, Santa Barbara County's gross agricultural production experienced a 35% increase over 2002 gross production [2] and SLO County had a 27% increase [5]. The increase in overall revenues in both counties is primarily

due to increase in wine grape acreage in the past 10 years. Average revenue statistics would lead one to believe that the agriculture economy is healthy in the grant Project Area. However, this is not necessarily the case as is shown in Santa Barbara County. In 2002 according to the U.S, Census of Agriculture, 57% of the farms had net losses. Also, between 1997 and 2002, there was a net loss of farmland that was converted to other uses. For example, the cattle industry had the greatest declines overall: the number of cattle operations in the county declined by 40% and the number of grazed acres declined by a net of 10,000 acres [7].

It is interesting to note that Santa Barbara County was the 14th most productive county in California in 2006[9] and the 21st most productive county by revenue in the U.S. In 2006, SLO County was the 16th most productive county in California [9]. SLO County's national ranking is unknown.

Growers in the project area often adopt a business strategy of owning base land and leasing additional land from other landowners. In a recent survey, 45.5% of growers own all of their land, 10% rent all of their land and 40.6% both rent and own land. Seventy-one percent (71%) of survey respondents were experienced, full-time producers who have been in agriculture for an average of 24 years [8].

Commodity Specific Issues

Commodities grown in both counties are primarily cool season vegetables such as lettuce, spinach, celery, broccoli and cauliflower, wine grapes, strawberries, avocados, small organic farms, and sub-tropical orchards. In terms of cropping patterns, cool season vegetables are found at the lower ends of larger creeks and rivers in Northern Santa Barbara and Southern SLO Counties. Grapes are planted inland throughout both counties. Strawberry production areas overlap with cool season vegetables. Avocados are found on the Coast in Southern Santa Barbara and Southern SLO Counties. Organic farm acreage is increasing. Many small farms are dedicated to organic production as well as larger, family-owned corporations have both organic and conventional farming operations.

As stated earlier, many farms and ranches in the Project Area had net losses of incomes in the past few years. None are recipients of government farm programs payments; therefore, each commodity group struggles with its own unique set of market forces and increasingly complex challenges.

For example, the cool season vegetable market struggles with continued consolidation of packers, distributors and grocery store chains. This has lead to low priced markets and slimmer operating margins. From an environmental management point of view, the Food Safety issue has increased their operating costs, created incredible liability and further complicated their ability to install pollution prevention practices that are traditionally viewed as being most beneficial to water quality. Food Safety as it relates to Water Quality will be addressed further in the report.

The avocado growers are dealing with the introduction of both imported produce and imported pests from Central and South America. From a water quality point of view, sediment management on hillsides and creek bank stabilization are their biggest challenges. Also, in 2007/08, they had to address the Light Brown Apple Moth quarantine and eradication requirements in Santa Barbara County.

The strawberry industry routinely struggles with overproduction. The introduction of new varieties has made Santa Maria very attractive to growing operations that were, previously, limited to Oxnard or Watsonville. In 2007/08 there was conversion of large acreage of premium vegetable growing ground to strawberry production. This is changing the rent base in the area and will have unforeseen, long-term implications on crop mix in the area. The pest management foundation utilizing methyl bromide fumigation and the associated environmental issues are very complicated and industry predictions are that California production will be diminished by as much as 20% when the phase out of methyl bromide occurs. Lastly, the industry is adapting to the challenges of managing a large uneducated, Hispanic growing community which has a substantial impact on water quality.

The flower and nursery growers confront challenges of staying on the cutting edge of technology in order to compete with U.S, and foreign competition. They have made great strides in managing water quality discharges through water recycling projects and the building of structures to reduce or eliminate off-site water discharge. One of their biggest production challenges is to find efficacious alternatives to methyl bromide fumigation. Also, they must absorb the increased cost in production associated with the Light Brown Apple Moth quarantine.

The wine grape industry is the healthiest of the commodities because the wine industry is attractive to global investment capital. While, in general, the industry is more sophisticated when it comes to marketing, in recent years, there has been either a glut or a shortage in wine grapes which creates wide variation in grape prices. Typically, perennial crop growers find it easier to implement "sustainable" environmental practices such as vegetated cover, as these are not as impactful to their overall operations. Furthermore, the industry does not have the same food safety challenges as faced by annual crop producers since their raw product, grapes, is processed into wine.

Note: All growers, regardless of commodity, are struggling with the instability of the current immigrant-based labor force, competition from international imports, low produce prices, and order of magnitude inflation for production inputs such as water, fuel and fertilizer. It is anticipated that input shortages will increase in the future which will have unanticipated positive and negative effects on water quality.

Knowledge regarding operation sizes, farm income, land ownership distribution and commodity-specific challenges is critical when considering the impact of regulations. In the Project Area, limited working capital impacts the ability of small to average growers to meet regulatory requirements. Most growers will comment that it is the cumulative effects of single-resource regulations that threaten their sustainability. It is well known that several small producers throughout the Central Coast "got out of farming" during the last four years and they cite regulatory burden as the principal cause.

EVOLUTION

The original intent of the grant was for the Coordinator to assist landowners in the project area "to form watershed working groups, attend water quality short courses, develop individual management plans, and implement and monitor progress of the plans."

The Coalition developed the following Strategic Guidelines during the grant period:

1) The Coalition is NOT a technical service provider.
(Note: The rationale behind this principal was to reduce perceived competition that might exist between technical service providing agencies such as NRCS, Cachuma RCD and UCCE as well as to limit potential liability that might exist from recommending management practices).
2) The Coalition will:
    a. Act as a point person/facilitator for diverse interests related to issues that affect agricultural water quality.
    b. Assist individual growers with Ag Waiver and other regulatory compliance; and
    c. Work with other organizations to provide water quality education and outreach.

Retrospectively, it can be seen that the Coalition's focus and The Coordinator job functions evolved over the life of the grant. In some cases, the evolution was because of external factors such as the adoption of the Ag Waiver, and in other cases, the evolution was a result of lessons learned during the process of working with growers, technical partners, regulatory agencies or other stakeholders. Below, is a synopsis of The Coalition's evolution.

July 2004 - Mid 2005 – AG Waiver Compliance and Initiation of the Cooperative Monitoring Program

The Ag Waiver was adopted on July 9, 2004. Grower Requirements were: 1) obtain 15 hours of water quality continuing education, 2) write a Farm Water Quality Plan, 3) enroll with the RWQCB, 4) monitor, and 5) implement water quality protection management practices.

In order for agriculture and individual growers to meet ambitious compliance deadlines, outreach efforts to provide Continuing Education Hours and compliance information ramped up. The focus of the Watershed Coordinator shifted temporarily when she served temporarily as a Technical Program Manager (TPM) for the Cooperative Monitoring Program. The following was accomplished:

- Participated in the initial formation of Central Coast Water Quality Preservation, Inc. (CCWQP), the non-profit which was formed to administer the Cooperative Monitoring Program. This included meetings to discuss by-laws, establishment of organization governance and selection of Board Directors.

- Selected a consultant, Pacific Ecorisk, to write the Quality Assurance Program Plan (QAPP) for the Cooperative Monitoring Program.
- Wrote an RFP and facilitated the selection of an environmental consultant to conduct the Cooperative Monitoring Program. Larry Walker Associates was chosen.
- Procured funds from the Guadalupe Settlement and PG&E Funds to cover CCWQP's start-up expenses.
- Facilitated a grant writer, Dane Hardin, Applied Marine Sciences, to write three proposals for the Prop 40 and Prop 50 Ag Water Quality Grants. $2.5 million was awarded to off-set growers' expenses relative to the Cooperative Monitoring Program. Growers benefited from these grants throughout 2005-2008.
- Facilitated the formation of grower-lead advisory committees for CCWQP.

The Coordinator served in this capacity until July 2005 when the current Executive Director of CCWQP was hired.

Mid 2005-Mid 2006 – Recognition of Institutional Barriers (i.e. Roadblocks)

During this time period, The Coalition coined the term "Institutional Barriers" to describe impediments to grower adoption of water quality management practices that resulted from external forces such as a regulation enactments, legal actions or market factors. Initially, three Institutional Barriers were identified:

1) Co-Management of Water Quality and Food Safety - In November, 2005, the U.S. Food and Drug Administration sent a forceful letter to the lettuce industry regarding the need to improve Food Safety. As a result, third party Food Safety auditors began to pressure growers to remove specific environmental management practices in order to better comply with recommended Good Agricultural Practices (GAPs) for food safety. In 2006, Food Safety outbreaks associated with spinach and lettuce resulted in the formation of the Leafy Green Marketing Agreement (LGMA) and its associated metrics which served as the baseline from which many third-party certifiers and buyers imposed extra-stringent food safety standards. Currently, the growers and the natural resource community are perplexed as to how to co-manage both Water Quality and Food Safety.

2) Permitting – Presently, permitting for restoration and/or construction projects requires multiple permits which require an investment of two to three years and several thousand dollars. In 2005, RWQCB granted funds to Sustainable Conservation to facilitate the creation of a coordinated permitting program in Santa Barbara and SLO Counties. The program will eventually result in a streamlined permitting program that enables growers to implement small practices to protect water quality or to restore habitat.

3) Endangered Species – Santa Barbara County (and adjacent lands in Southern San Luis Obispo County) have more endangered species than any other county in mainland U.S. Many of the species are associated with aquatic habitats. Protection of endangered species can be both proscriptive and prohibitive. For example, the Red Legged Frog Stipulated Injunction imposes pesticide application buffers for 66 pesticides. This, in and of itself, would not be problematic except that many of these pesticides do not have alternatives and the consequence is that compliance could result in complete fields taken out of production. Furthermore, growers are concerned that documented presence of endangered species on their property will result in a loss of control over land management decisions. Attempts to utilize landowner tools, such as Safe Harbor Agreements or Habitat Conservation Plans, established by the ESA have not been successful in the area.

There is an additive and intriguing interaction between these three barriers and the result is that little incentive exists and multiple obstacles impede establishment, restoration or preservation of riparian and species habitat. The intersection of these issues will become more acute in the future without proactive and collaborative intervention.

Mid 2006 to present

Source Control versus Pollution Prevention Practices:

The issues listed above are too broad in scope and too complex to address on a small geographical basis. Therefore, The Coalition and Technical Service Providers and growers began to concentrate on activities that they could control. They divided management practices into two categories: *1) Source Control Practices which are input driven and largely controlled by the grower and have few Institutional Barriers, and 2) Pollution Prevention Practices which, generally, are discharge related and associated with a greater number of Institutional Barriers.*

Source Control Practices are related to fertilizer, pesticide and irrigation applications. Examples of Pollution Prevention Practices are: vegetated barriers, sediment or return flow basins, filter strips, habitat restoration, and establishment of riparian buffers, etc. Efforts were concentrated on Source Controls as is verified through the 2005 RWQCB Management Practice Checklist that was required as part of the Ag Waiver enrolment process. Below is a region-wide summary of the Checklist [10].

Generally, adoption of Pesticide Management Practices (MPs) is fairly high as most are source controls. The following management practices are adopted on > 88% of all acres: 1) IPM programs, 2) Applications based on scouting data, thresholds, and/or risk assessment models, 3) Runoff or leaching potential is considered, 4) Pesticide toxicity to non-target organisms is considered , 5) Application equipment is calibrated, 6) Yearly pesticide training is provided for all pesticide handlers, and 7) Pesticide mixing and loading areas are located to reduce the likelihood of contamination of water sources.

Similarly, adoption of Fertility Management Practices is fairly is high. Over 75% of total acres implement the following: 1) Nutrient budgets established based on irrigation water and soil tests results, 2) Backflow devices are placed on wells to prevent contamination during fertigation, 3) Fertilizer equipment is calibrated, and 4) Mixing and loading is done to reduce runoff hazard and over 100' from wells.

Adoption of Irrigation Management Practices is lower. The least adopted MPs are: 1) Use of measured or published evapo-transpiration data (CIMIS), 2) Use of soil water-holding capacity information, 3) records keeping, and 4) Use of an irrigation mobile lab system evaluation. Vineyard growers are the most likely to use CIMIS data. Vineyard and row crop growers are the most likely to know the moisture holding capacity. Vineyard growers are most likely to keep irrigation records. In regards to use of the mobile irrigation lab; 16% of all crops , 23.2% row crop 14.5% orchard, 13.2% vineyard 9.3% nursery, 7.5% greenhouse and 18.6% of other, have utilized this service.

Erosion and Sediment Management Practices focus on Pollution Prevention. Level of adoption varies among crop groups: 1) The use of hedgerows, trees, and shrubs is adopted on about 36% of the all acres while 25% say that it is not applicable, 2) About 50% of all growers said that water and sediment control basins are not applicable while vegetable growers were more likely to have basins than other growers, 3) Only about 42% of acres utilize vegetative buffers, and 4) Over 53% of all growers (45% of all acres) said that riparian buffers are not applicable on their properties.

These trends as seen in the regionwide data above are verified by the 2004 Oso Flaco Nitrate and Sediment Assessment. Greater than 80% of growers (mostly cool season vegetable growers) adopted Source Control practices such as irrigation scheduling, pump efficiency evaluations, drainage ditch installations, pesticide management, culvert/grade structure installations, tailwater return system, soil sampling, split applications of N fertilizer, plant tissue sampling, low N application for fall tillage, and avoidance of N in water runs. Zero percent (0%) had implemented Pollution Prevention practices such as vegetated county road ditches or creek and channel bank stabilization and only 47% had installed drop box inlets!

Data indicate that growers are adopting Source Control practices. The area with the biggest need for improvement is in applying existing technical information to irrigation practices. Increases in fuel, fertilizer, water and pesticide prices will force growers to become more efficient as they attempt to achieve the same yield with fewer inputs. Adoption of sediment management (i.e. Pollution Prevention) practices will continue to be problematic because of Food Safety.

OUTCOMES

The Coalition provided value as demonstrated by outcomes and outputs. Accomplishments are highlighted above in the Executive Summary. Important outcomes of The Coalition's activities are described below.

Outreach and Education

Two surveys measure The Coalition's value as perceived by growers. The first survey was funded by the Agricultural and Natural Resources, University of California (UCD) and was conducted in collaboration with University of California Cooperative Extension (UCE), UCD, and the Cachuma Resource Conservation District

(CRCD) [8]. The purpose of the 2007 survey was to ascertain producers' actions and attitudes relative to the Ag Waiver and water quality issues and how those actions and attitudes were shaped by water quality educational efforts. The survey was delivered to about 2000 growers. Respondents were 425 English speaking growers and 29 Spanish speaking growers surveyed in SLO and Santa Barbara Counties. Thirty-four percent were in Santa Barbara County and 54% were in SLO County and 8% farmed in both counties.

In general, 75.7% of survey respondents had participated in the Water Quality Planning Short Courses. Those that had attended found it easier to obtain information regarding Ag Waiver compliance or management practice implementation (69% as compared to 52% of non-participants). They also found that education was useful in determining what water quality management practices to implement (72% vs. 55% non-participants) and that the Ag Waiver successfully promoted water quality (63% vs. 53% non-participants).

Furthermore, the following information characterizes respondents and indicates that the leadership and collaborative actions of the Coalition has resulted in an unprecedented level of compliance in the Ag Waiver and participation in water quality protection. At the time of the survey, 76.6% had enrolled, 75.7% had attended a Short Course, 70.2% had completed a water quality management plan, and 75.9% were implementing water quality protection practices.

The second survey was the Four Year Grower Survey of The Coalition's Outreach Effectiveness. A randomized sample population of 80 out of 408 growers were surveyed in early 2008 to determine if their contact with the Coalition during 2004 -2007 was useful. The survey attempted to measure how well The Coalition assisted growers with questions and compliance needs, and also, to determine if growers were implementing additional practices as a result of Ag Waiver requirements and if those management practices were fully documented. This survey in its entirety may be found on The Coalition's web-site [11]

Below, is a summary of survey responses. The ranking scale is from 1-10, with 10 being the highest score.

1. How helpful was the Coalition in providing you with the assistance you needed? **8.4**
2. Was Kay, The Coalition Coordinator, able to answer all of your questions? **92% Yes, 3% No, 5% unknown**
3. a) Did Kay direct you to the contact additional people? **58% Yes, 26% No, 16% unknown.**
   b) If the answer above is yes, who did you call? **See survey for the list. All Coalition co-operators and regulatory agencies received relatively high scores of 8-10.**
   c) If you had difficulty in receiving the information you needed, why do you think that was? **The answers tended to focus on the RWQCB's ability to respond to their questions.**
4. Are you currently in Tier 1 or Tier 2 of the Conditional Ag Waiver? **84% Tier 1, 3% Tier 2, 10% Unknown, 3% N/A**
5. Have you made any changes to your farming practices to respond to water quality issues? **81% Yes, 15% No, 2% Unknown, 2% N/A**
6. Are you doing any additional practices that benefit water quality that were not reported in your farm plan or on the RB Management Practice Checklist? **27% Yes, 63% No, 7% Unknown, 3% N/A**
   (Note: Most respondents indicated that they were able to include all practices in their Farm Water Quality Plan; however, it was the extent of the practice that was not easily quantified. Also, respondents had questions about how to include practices that were in progress or being maintained).
7. Do you plan to make any future changes? **63% Yes, 23% No, 13% Unknown, 2% N/A**
8. What information or actions can the Ag Coalition provide that would be more helpful to you in the future? Responses were arranged in order of importance, followed by a numerical rating.
   1. **Interface with Environmental Interest Groups in order to better educate them about the challenges of farming and water quality management? 8.1**
   2. **Provide Management Practice Education? 8.0**
   3. **Interface at the National, State and Regional levels representing water quality and related issues (such as food safety, endangered species, and pesticides regulations) that are affecting your abilities to make a profit? 7.9**
   4. **Provide educational programs concerning the relationship of water quality to production practices? 7.4**
   5. **Outreach to irrigated agriculture regarding changes to the Conditional Waiver program? 7.4**
   6. **Assistance understanding Water Quality Monitoring Data 7.1**
   7. **Assistance obtaining funding to do on-farm water quality improvements? 7.1**
   8. **Form Watershed Working Groups to concentrate on localized water quality issues? 6.6**

Interestingly, there appears to be an inverse relationship between what growers want from the Coalition and what regulatory and technical service providing agencies' emphasize (i.e. formation of watershed working groups, funding assistance, and interpretation of water quality data) as necessary to improve water quality.

Management Practice Implementation

Growers in the Project Area are extremely resourceful. The Coordinator has found that they are responsive to logical and meaningful information and will independently incorporate that information. As a result, The Coalition provided multiple training seminars on pesticide management in grape, strawberries and vegetables, cover crop and sediment management in avocados, an orchard management field tour, seminars on pathogen loading, a nitrate management field tour, nitrate management seminars, water quality data seminars, and participated in irrigation management seminars. More details on seminars may be found on the Coalition's web-site [11].

Unfortunately, there are currently no tracking mechanisms with which to measure what new practices are being implemented and whether those practices are truly effective in protecting water quality. This creates a vacuum in which many conflicting assumptions exist about what growers are and are not doing to protect water quality. Since growers tend to concentrate on source controls which are not readily visible; other parties such as regulatory agencies, natural resource professionals and environmental advocates tend to think that management practices are not being adopted as the evidence of Management Practice implementation is not tangible. .

Collaboration

One of the Coalition's most critical collaborative activities was the Co-Management of Water Quality and Food Safety Conference [12]. The Coordinator teamed UCCE and a consortium of interested water quality and food safety professionals to organize a conference to evaluate and understand real risks associated with three specific environmental practices: vegetated waterways, riparian buffers and sediment basins. The result of the conference was a list of research objectives that were organized in three categories: Pathogen Vector or pathway, Management Practices and Mitigation, and Risk Management.
The "Top Five" Research Priorities resulting from a post-conference reiterative evaluation (Delphi) process were:

- Identify the fate of pathogens captured through various conservation practices
- Characterize the persistence of pathogens in the growing and harvesting
- Characterize the persistence of pathogens in the growing and harvested crop
- Identify animals including smaller mammals and birds, which are significant pathogen vectors
- Specify proven practices that preserve food safety while improving water quality

In summary, focusing research priorities on understanding pathogen persistence and pathways; and creating a coordinating council to provide leadership in co-management strategies are considered to be of most immediate importance. Work is ongoing on these research priorities.

Another important collaborative activity was the 2007 Carpinteria Valley Land to Sea Tour [11]. The purpose of the Land to Sea Tour was to bring together a group of conservation, technical service providers, growers, biologists, county employees, commodity organizations, regulators, activists, environmental scientists, and consultants to cross-educate attendees regarding agricultural management practices and water quality and environmental issues in the Carpinteria Valley. Over 80% ranked it as an excellent tour in a post-tour evaluation.

Other Collaborations consisted of organizing or participating in many seminars which involved diverse interests such as:

1) the Tri-County FISH Ranching seminar which increased understanding of grazing issues among environmentalists and the natural resource community in Santa Barbara County
2) The Cut-the-Crap Seminars which galvanized ranchers to participate in writing the Grazing Lands NPS Approach,
3) The Coalition Council which was required by the Guadalupe Settlement Fund contract, but was not very effective. It was difficult to bring together parties from both southern Santa Barbara County, northern Santa Barbara County and southern SLO County,
4) periodic attendance of the Southern California Wetlands Recovery Program Meetings, and

5) And participation in venues such as the Santa Barbara Community Action Network, the Dunes Collaborative and the Santa Barbara County Water Forum which resulted in heightened awareness of grower efforts relative t o waste quality protection among the Project Area.

Watershed Working Groups:

Much emphasis is placed on watershed working groups by natural resource professionals and regulators as the principal tool for improving water quality. To that end the Coordinator participated in the following watershed working group activities:

1) The Rincon Creek Watershed Council is a partnership of local interests whose goal is to restore and protect creek resources and create natural conditions in the watershed. Several avocado growers from the watershed attended the meetings regularly. The Coordinator attended meetings and provided comments from an agricultural perspective on the watershed plan which focused on restoring riparian and fish habitat.

2) Carpinteria Creek Watershed Coalition is a partnership diverse interests working together to create conditions that will allow healthy steelhead stocks to recover in the creek. It is very productive and has realized many restoration goals. Quite often the Coalition is the sole agricultural representative attending these meetings.

3) The Coalition served on the San Antonio Coordinated Resource Management Plan (CRMP) Steering Committee. Many sediment reduction improvements were identified which require extensive engineering. The CRMP steering committee is in search of grant funding to pay for engineering design and implementation.

4) The formation of a Santa Maria River Watershed Working Group has been a long, slow process. The Santa Maria Estuary Watershed Plan was completed in 2005. The purpose of this plan was to identify and describe the natural resources, recommend management measures, suggest alternative land use practices, and develop a comprehensive monitoring program to allow for adaptive management and modification of the plan. The Coalition implemented applicable Recommended Management Actions by: 1) facilitating the Central Coast Grazing Lands NPS Approach which will promote the Rangeland Water Quality education and emphasize the need for ranch specific Rangeland Water Quality Plans; 2) participating in Farm Water Quality Planning Short-Courses to assist growers with the development of water quality plans and 3) working with CCWQP to develop and implement a water quality monitoring program. Implementation of other recommended Management Practices pertinent to the Agricultural Watershed Coalition such as building tailwater recovery or sediment basins were stymied by the emergence of the Food Safety issue.

   For the most part, growers concentrated on implementing management practices on their individual properties through 2007. In early 2008, the first watershed working group meeting occurred. Most growers agreed that there were benefits in a collaborative approach to watershed planning. However, there were many obstacles to formalizing a watershed-based group. The next step is to form sub-watershed groups that cluster around impaired Cooperative Monitoring Program sampling sites. This will reduce obstacles by decreasing the size of the working groups and allowing growers to concentrate on issues that are directly pertinent to their operations. Over time, these groups will realize that mitigations require the concerted and collaborative action of a watershed working group. A Santa Maria Watershed Coordinator was fully funded by a Department of Conservation Watershed Coordinator Grant to facilitate the cluster process in 2008-2011.

   Finally, The Coalition teamed with Cachuma RCD to obtain California Department of Food and Agriculture Fertilizer Research Education Program Funding to provide Hispanic growers in the Santa Maria Watershed with basic fertilizer and irrigation training in 2008-2010. Training will target small growers that sublease from cooling facilities, mid-size independent growers, and large farm managers and irrigators.

5) The Oso Flaco Watershed Nitrate and Sediment Assessment for Oso Flaco Watershed was written in 2004; but a final copy was not approved until 2008. The Oso Flaco Grower Group identified six action plans called "What Can Growers Do?" to reduce soil erosion and nutrient run-off:
   1) Implement the farm plans.
   2) Evaluate their irrigation systems to make sure that they are applying water and nutrients in the amounts that the crops need.

3) Test the soil for nitrate before applying more nitrogen fertilizer.
4) Test irrigation wells for nitrate content, annually, and factor that nitrate into the nitrogen application rate for the crop.
5) Monitor the effectiveness of the nutrient management and erosion control practices.
6) Continue participation in the Watershed Working Group.

The Coalition teamed with CRCD to assist growers with Item #1 as all other items required the assistance of a technical service provider and referred growers to RCD for items 2-5. Growers were sidetracked from continued participation in the Watershed Working Group by the Food Safety Issue.

The Coordinator interacted with Sustainable Conservation to finalize a Safe Harbor Agreement for Red Legged Frogs in this watershed. The Agreement was complicated by multiple endangered plant species in the area that inhibit California Department of Fish and Game's approval of a single species Agreement. Another road block was the insistence on agency visits to proposed properties. Landowners were concerned about granting access to U.S. Fish and Wildlife Service (USFWS) or DFG. Eventually, a draft Agreement was handed to USFWS for review. Interest in the Agreement abruptly declined after the 2006 Stipulated Injunction for Red Legged Frogs was imposed. The Coalition collaborated with Department of Pesticide Regulation and provided growers with training regarding the Injunction. Interest in the Safe Harbor Agreement may be renewed in the future.

Total Maximum Daily Loads (TMDLs)

The Coalition participated in the Santa Maria River/Oso Flaco fecal coliform, nitrate/ammonia and pesticide TMDL as well as the South Coast Beach bacteria TMDL public processes. The Coalition organized two seminars that explained the TMDL process to growers. Additionally, she commented on draft project plans and has provided information to RWQCB staff in an effort to craft effective TMDLs. For the most part, it is anticipated that irrigated agricultural will be addressed through Ag Waiver compliance as part of the TMDL implementation plans. The Coalition responded to microbial TMDLs by facilitating the writing of the Grazing Lands NPS Approach. It remains to be seen how the implementation plans will address fecal coliform loading from grazing operations.

CHALLENGES

As stated above, water quality issues continuously evolved as new information was learned, new regulations were enacted, or unanticipated events occurred such as food safety outbreaks. The Watershed Coalition struggled to anticipate issues and to prepare funding and staffing in order to address them.

The Coalition was highly productive while prioritizing multiple demands and simultaneously procuring funding in order to meet a 40% match requirement. Funding challenges existed. The Coalition was not a 501(c) 3 organization; but depended on the Central Coast Wine Growers Association to "hold" grant funds on its behalf. This was confusing to some grantors who preferred to award grants to established institutions such as governmental agencies or to organizations with established track records. SWRCB GPS reporting requirements created an additional roadblock to funding as it created an additional layer of distrust in growers' minds about how data collected during grant projects will be used by granting agencies. Consequently, finding grant co-operators has become more difficult.

One challenge, which has reached critical mass in the Santa Barbara area, is the limited number of technical service providers. Currently, there are several vacant UCCE farm advisor positions that need to be filled. Likewise, other technical service providing agencies are barely staffed. It is difficult to provide 1500 growers with the type of one-on-one technical assistance necessary to make large scale change if there are not adequate resources.

Another challenge is that there is a long time-line required for changing adult behaviour. Adult learning requires repetition and time for idea assimilation. An adult must "hear" information several times before it is "heard" - not before it is learned - much less adopted. To a certain degree, water quality was a "new" issue for northern Santa Barbara and Southern San Luis Obispo Counties as there was a lack of previous grants and associated initiatives. Little preparatory work had been done in the area prior to adoption of the Ag Waiver.

The Coalition Board was formed by a group of committed individuals. However, The Coordinator actually had many other "bosses" in that funds were handled by the Central Coast Wine Growers Association Foundation and each Coalition Board member organization had respective Board of Directors. This extensive network was essential for expediting communication; but could be cumbersome for purposes of funding or administration. There existed a need to improve organizational efficiencies and administration.

WHAT IS THE FUTURE OF THE COALITION?

The basis for a successful program has been instituted. The Southern San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition and its Coordinator have established credibility with a sound track record. Now, it is time to look to the future.

The Coalition will proactively address organizational challenges by actualizing a merger with the Central Coast Agriculture Water Quality Coalition. The two organizations will become one region-wide entity. This will ease funding and administrative challenges. It will reduce duplication of overhead staff and professional services. It will increase leverage for funding and resources and will garner attention from policy makers and resource agencies.

The newly aligned organization will match coordinators' and project managers' skill sets with projects needs. It will increase flexibility to address region-wide issues or to focus on a single sample site. It will create a region-wide entity that is better able to address institutional barriers and implement true change.

From a funding point of view within the Project Area, The Coalition has been successful in obtaining a major award of $337,000.00 from the Department of Conservation Grant to fund a Santa Maria Watershed Coordinator. This will focus efforts on on-farm, in-field problem solving in a priority watershed. It will be the basis for collaborative efforts and developments of innovative mitigations...

Grant funds from the Guadalupe Settlement Fund will be the final element needed to position the Coalition as an essential element for practical, collaborative problem solving for water quality improvement.

FOOTNOTES

(1) Santa Barbara County Data http://www.city-data.com/county/Santa_Barbara_County-CA.html
(2) Santa Barbara County Crop Report http://www.countyofsb.org/agcomm/cropRpt/2007.pdf
(3) The Changing California, Forest and Range 2003 Assessment Http://www.frap.edf.ca.,gov/assessment2003
(4) San Luis Obispo County Data http://www.city-data.com/county/San_Luis_Obispo_County-CA.html
(5) San Luis Obispo County Crop Report http://www.slocounty.ca.gov/agcomm/Crop_Reports.htm
(6) Central Coast Ambient Monitoring Program (CCAMP) http://www.ccamp.org/
(7) Santa Barbara County Agricultural Resources Environmental/Economic Assessment (AREA) Study, Submitted to Santa Barbara County Department of Planning and Development, American Farmland Trust, November 2007.
(8) Bianchi, M.L., Lubell, M, Mercer, K.L., Attitudes and Actions Survey, ANR, University of California, 2007, Publication pending.
(9) California Agricultural Statistical Review http://www.cdfa.ca.gov/files/pdf/card/ResDir07_Overview.pdf
(10) Ag Waiver Management Practice Checklist http://www.swrcb.ca.gov/rwqcb3/AGWaivers/documents/2007_6_11_ChecklistReport.pdf
(11) Coalition Web-site http://www.agwatershedcoalition.org/
(12) Co-Management of Water Quality and Food Safety Conference http://groups.ucanr.org/wqfsconf/index.cfm