

Agriculture and Water Quality on California's Central Coast

A Collaborative Approach

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In the state of California, rural areas of nonfederal lands that do not have extreme climates or challenging topography—such as Death Valley or the Sierra Nevada—are largely agricultural. Thus, rural water issues in California are inextricably tied to that industry.

The Central Coast is an immensely rich agricultural area (see map) that provides nearly all of the nation's lettuce during the winter, as well as a wide variety of vegetables, fruits and flowers year-round. Here, irrigated agriculture is concentrated in major drainages, including the Salinas Valley, upper Salinas watershed, Pajaro Valley, lower Santa Maria River, and the Santa Barbara coastal area, and encompasses approximately 438,000 acres. About 3,000 agricultural operations are in the region, ranging in size from less than ten acres to more than 2,000. Approximately two-thirds of all operations are smaller than fifty acres.

Most Central Coast farms use groundwater as their water source; there are no large irrigation districts. Although water quality concerns related to agricultural practices have come to the forefront in California, addressing them is not always the highest priority of the farmers. Many properties have been held in families for generations and are leased out rather than sold. Leases can be short-term (one year) or long-term (more than five), resulting in varying levels of interest by lease-holders to implement water quality protection.

Food safety issues increasingly dictate practices vegetable growers must use to sell crops. Unfortunately, recommended food safety practices sometimes run counter to water quality protection practices. These and various market impacts have caused the agricultural

industry to be extremely sensitive to cost increases and management practice requirements, increasing the challenges faced by regulatory agencies trying to protect both natural resources and human health.

Water Quality Impacts

Water quality in California is regulated through nine regional water boards appointed by the governor. Historically, the boards focused on regulating point-source discharges through a system of permits. Most waived permits for agriculture in the 1980s, when little was known about the

quality (www.ccamp.org) and has revealed significant water quality problems in agricultural areas. Nitrate in some surface waters is present at levels far exceeding the drinking water standard. Groundwater basins underlying some agricultural areas show nitrate concentrations many times over the drinking water standard, resulting in well closures and loss of water supplies. Persistent toxicity attributed to organophosphate pesticides has been documented in two major agricultural areas.

Voluntary Programs Initiated

Several segments of the agricultural industry have taken a proactive approach to water quality protection. In the mid-1990s, efforts to promote sustainable practices among wine grape growers were initiated, and outreach and education programs for Spanish-speaking farmers were developed. In 1999, county farm bureaus and the Monterey Bay National Marine Sanctuary developed a partnership to improve water quality in the watersheds draining into the sanctuary. In other areas of the region, the agricultural industry has developed local collaborative watershed coordination programs.

In support of these voluntary programs, and to help farmers focus on water quality issues, in 2001 the University of California Cooperative Extension developed a 15-hour Farm Water Quality (FWQ) Planning Short Course in cooperation with USDA Natural Resources Conservation Service and the agricultural industry. Its objective is the development of an individual farm water quality management plan. To support plan development, producers: learn water quality regulations, local watershed information, techniques for assessing non-point source pollution, methods for



Areas of irrigated agriculture in the Central Coast Region, based on 1992 land use data.

impacts of irrigation tailwater and other runoff or the magnitude of groundwater impacts from inorganic fertilizers. Water boards only recently began systematically monitoring water resources within their jurisdictions. The Central Coast Water Board's (CCWB) monitoring program now provides information on regional water

recognizing existing practices that protect water quality, and management practices suited to local conditions and crop types; establish sediment, nutrient, and pesticide management goals; and practice evaluation methods. Instructors are drawn from multiple local resource agencies and industry watershed coordination programs, and provide ongoing support as producers implement their plans and initiate new water quality management practices.

More than 1,700 English- and Spanish-speaking growers throughout the region's seven counties now have received training on developing and implementing farm water quality management plans. The University of California is currently surveying producer attitudes about water quality and the impacts of water quality education on water quality protection. Published curriculum materials are available at waterquality.ucanr.org.

Addressing New Water Quality Requirements Collaboratively

Recently, pressure has increased to control what many, especially in the environmental community, perceive as unregulated agricultural discharges. As a result, in 1999, California amended its water quality law to add significant new requirements to all agricultural permit waivers.

The change in waiver requirements and new data indicating water quality concerns convinced CCWB, which was aware of the contentiousness of this issue, to increase its focus on agriculture. In view of the ongoing positive relationships and proactive efforts by Central Coast producers to improve water quality, CCWB staff initiated a collaborative negotiation process to develop new waiver requirements. They convened an advisory panel of agricultural and environmental representatives from across the region to help develop an appropriate regulatory program.

Using a facilitated process designed and led by CCWB staff, the panel adopted ground rules and learned the interests and concerns of each participant. With this foundation of understanding, participants could then discuss ideas and propose

solutions in a respectful environment. The group's adopted mission is "to assist staff in developing recommendations to the Regional Board for a replacement to the expired waivers that will be protective of water quality, the viability of Central Coast agriculture, and comply with state law."

During a series of meetings over 18 months, the panel reached agreement on the program's main requirements. Building on existing industry efforts and the FWQ short courses, the panel recommended that all commercial irrigated operations in the Central Coast region enroll with the Water Board, complete 15 hours of water quality education, develop a farm water quality plan, regularly report management practice implementation, and either perform their own monitoring or participate in an industry-led group monitoring program. The final proposed regulations were adopted unanimously by CWWB in July 2004.

Since then, the agricultural industry has done an enormous amount of outreach

to Central Coast growers to inform them of the new requirements and help them comply. Local technical resource providers have worked with UC Cooperative Extension and the Natural Resources Conservation Service to deliver more than 30 additional FWQ short courses in 24 months. As a result, nearly 90 percent of irrigated acreage in the region is enrolled in the program. Collectively, producers managing more than 300,000 acres have met the education and planning requirements and are implementing practices to protect water quality.

No one would contend that the program is perfect, and everyone recognizes that water quality improvement will take a long time. The agricultural and environmental communities, the University of California, and USDA, along with partnering resource agencies and CWWB staff are justifiably proud of both what has been accomplished so far and their efforts to work together.

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