

BACKGROUND INFORMATION

Irrigated Ag Order Renewal

Water Quality Issues

The Central Coast Region includes a diverse landscape of agricultural crops, including vegetables, strawberries, orchards, and vineyards. Irrigated agriculture represents a significant land use in the region, comprising about 438,000 acres spread among several watersheds. The major agricultural watersheds include the Salinas River, Pajaro River, and Santa Maria River, with additional acreage in many smaller watersheds.

Central Coast Water Board staff monitors and assesses water quality in the Central Coast Region through our own Central Coast Ambient Monitoring Program (CCAMP), and through coordination with other monitoring programs and research activities. In addition, the Cooperative Monitoring Program (CMP) established by the Irrigated Ag Order began water quality monitoring in agricultural areas in 2005. Central Coast Water Quality Preservation, Inc., a non-profit organization formed by the agricultural industry to meet its monitoring obligation, conducts monthly monitoring for nutrients and other general water quality parameters, and toxicity monitoring five times a year (water sampled twice in wet season, twice in dry season and annually for sediment) at 50 sites in agricultural areas throughout the region.

Surface Water Impacts

The Cooperative Monitoring Program continues to show significant impacts from agricultural operations, specifically, toxicity related to pesticides and high nutrient levels. Overall, nearly half of the cooperative monitoring program sites have shown significant toxicity to invertebrates and 60% of the sites have averaged greater than the current Basin Plan objective for nitrate in drinking water (10 mg/L of nitrate as nitrogen) over the past four years. For nitrate, there is currently no numeric objective to protect aquatic life, but the literature suggests an aquatic life nitrate objective would be significantly lower than the drinking water objective, at approximately 1 mg/l. Staff is continuing work to develop an appropriate nitrate level for the protection of aquatic life.

As part of its regulatory obligations, the CMP conducts follow-up work amounting to an additional 25% of its annual monitoring budget to follow up on identified problems. The first follow-up study included a concurrent analysis for invertebrate toxicity and organophosphate pesticides at 25 sites, to determine whether these commonly used pesticides could be the cause of the toxicity at CMP sites. This work confirmed and expanded upon the results of previous studies, showing that two organophosphate pesticides, chlorpyrifos and diazinon, account for much of the toxicity at the CMP monitoring sites. The CMP has provided this information to growers in the Salinas and Santa Maria watersheds as part of coordinated outreach to help growers understand their impacts and modify their practices to better protect water quality. Other follow-up studies have recorded summer flows in six agricultural watersheds and have done monitoring upstream of the existing sites to better characterize sources of pollution. The CMP is currently preparing several reports summarizing water quality monitoring data from 2005-2009, as well as results of follow-up projects. The reports will provide us with a comprehensive analysis of CMP results to date and will include an analysis of trends in water quality and loading where there is sufficient data. This information will be included as part of our water quality analysis for the revised Irrigated Ag Order in 2010.

Groundwater Impacts

The Board's records included limited groundwater data during development of the first conditional waiver in 2004, with the majority of information primarily focused on the Salinas Valley. According to Department of Water Resources Bulletin 118, at least 93 public supply drinking water wells in the Central Coast have nitrate concentrations greater than the drinking water standard (10 mg/L as nitrogen)¹; however, the number of polluted wells is likely to be significantly higher, since this number does not include rural domestic wells. Staff's uncertainty regarding the exact number of wells is a reflection of both how incomplete the data currently are and how difficult collecting private well water quality information can be. As part of the Irrigated Ag Order renewal, staff is currently gathering groundwater data from all our groundwater basins (e.g., ambient water quality, concentration trends over time for specific pollutants, sensitive recharge areas, preferential pathways, etc.). This includes looking at basins that have significant agricultural acreage. This is an immense project that will help staff better understand trends and actions necessary to improve and protect groundwater basins in agricultural areas. Staff is also planning to participate in a joint project with Monterey County Water Resources Agency (MCWRA) and the State Water Board to do a pilot project in Salinas to look at groundwater nitrate impacts.

Aquatic Habitat Impacts

Protecting aquatic habitat is critical for protecting beneficial uses. Staff is currently assessing the state of aquatic habitat health throughout the region and assessing the impact that irrigated agricultural and food safety requirements are having on riparian and wetland habitat. Staff is also reviewing all available information on aquatic habitat protection requirements, ordinances, and regulations nationwide, looking at economic costs associated with both loss and protection, and coordinating with efforts in other regions.

Marine Area Impacts

Water Board staff is gathering available information on marine environments in the region, including Marine Protected Areas, to assess potential impacts from irrigated agriculture. Staff will look at pollutant loading, and assess impacts to aquatic and public health in order to develop adequate requirements to protect marine areas throughout the region.

Agricultural Regulatory Program

Water Board staff must complete significant work prior to bringing a new order to the Board; the new order will build on successes of the existing program and directly address water quality problems from agricultural discharges that are not adequately served by the existing order. During the renewal period staff will continue to implement the existing Irrigated Ag Order through a coordinated watershed approach that emphasizes priority water quality issues, such as toxicity, nutrients, and sediments. Staff will continue assessing implementation and compliance and targeting enforcement actions as necessary.

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¹ Department of Water Resources Bulletin 118, California's Groundwater Update 2003