



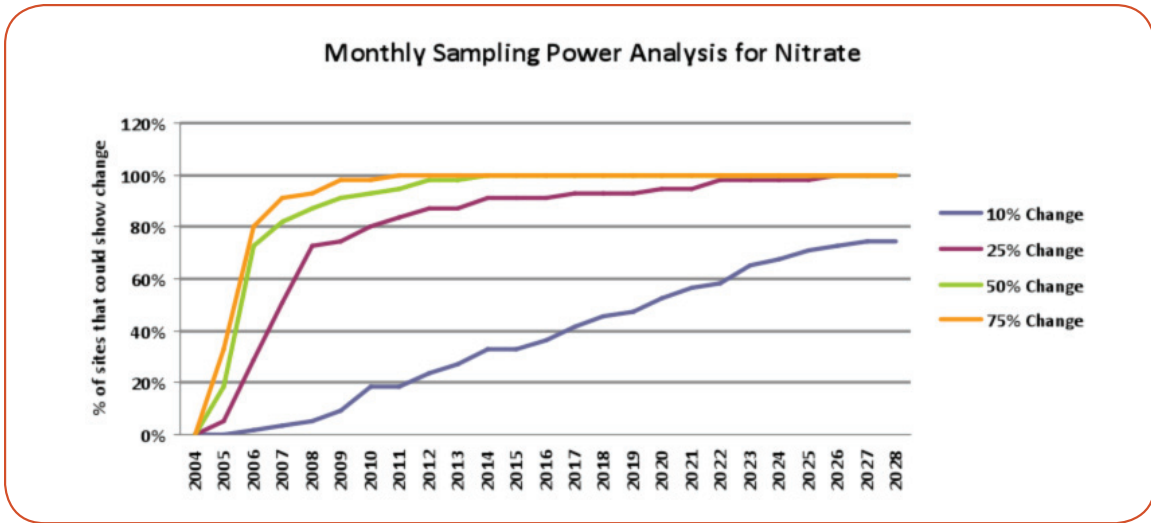
## 2012 IRRIGATED AGRICULTURAL ORDER (AG ORDER)

### What is it?

Central Coast Ambient Monitoring data, along with data collected by the Cooperative Monitoring Program for Agriculture, provided critical information to support decision-making related to the 2012 Irrigated Agricultural Order (Ag Order) in the Central Coast region. The Ag Order is ground-breaking in that it, among other requirements, defines high risk growers (based on crop type, acreage, location relative to impaired waters, and pesticide use), requires individual monitoring by those growers, and requires groundwater monitoring for nitrate concentrations. Monitoring data collected by the two programs was used to broadly describe the scope of the problem, and to justify specific monitoring requirements. For example, monthly monitoring was required for conventional pollutants at fixed sites, with the intent that these sites would be able to show the effectiveness of the program over time. Trend analysis after five years showed some change in some locations, both in terms of concentration and load, but in some cases there was a declining trend in water quality and much more work is needed in many locations in order to meet water quality standards. The monthly monitoring used by both programs provides sufficient data to detect change in both concentrations and loads, but typically 25% or more real change in terms of concentrations is needed to show this change in a reasonable timeframe. The figure below shows a power analysis of nitrate data at sites monitored by the Cooperative Monitoring Program. It estimates the percentage of all sites that would show a statistically significant change of 10%, 25%, 50%, and 75% with increasing sample size over time. For example, if there was a 25% improvement in concentrations at all sites, approximately 75% of sites would be able to prove this statistically in 5 years.

### Why is it important?

Agricultural water quality issues are the most important, complex, and widespread of problems confronting the Central Coast Region. High applications of fertilizers over many years have resulted in both surface and groundwater exceeding drinking water standards in intensively



irrigated agricultural areas, particularly in the lower Salinas and Santa Maria areas. This has become an important environmental justice issue because many lower income residents in these areas are either drinking unsafe water without knowing it, or are having to pay for bottled water that they cannot afford. Aquatic life uses are not supported in many streams traveling through agricultural areas because of heavy pesticide use and associated water and sediment toxicity. Stream bottom invertebrates are severely impacted in these areas of heaviest impact by agricultural activities. Monitoring data will be able to show if the Ag Order and resulting changes in agricultural activities are effective at turning these problems around.

### How will this information be used?

Monitoring data informed many conditions in both the 2005 and 2012 Agricultural Orders. For example, high levels of water toxicity tied to organophosphate pesticides justified requirements for additional reporting requirements placed on growers that use these pesticides. Monitoring data informed 303(d) listings for agricultural pollutants, which in turn formed the basis for the tiering structure, the waterbodies included in the monitoring program, and specific requirements for high nitrate use crops and riparian buffer protection. Because the monitoring programs are set up for trend detection and because a robust baseline of data already exists, Central Coast Regional Board staff anticipate that the upcoming five years will be key for showing program effectiveness.

More information is available on the Central Coast Water Board Agricultural Regulatory Program [website](http://www.waterboards.ca.gov/water_issues/programs/swamp).