Agricultural runoff is one of the largest sources of pollution in the nation's waterways. In recent years, scientific journals and the media have been filled with reports of toxic algae blooms and dead zones near and far: The Everglades, Great Lakes, Gulf of Mexico, Chesapeake Bay, and San Francisco Bay-Delta. Agricultural pollution also threatens public health in communities that rely on tainted groundwater. In California alone, more than a quarter million residents in largely agricultural areas are served by water systems with degraded groundwater quality.

Unfortunately, in today's highly politicized federal climate, it is unlikely that an effective solution to this problem will emerge from the U.S. EPA – at least not at the moment. So efforts by state regulators are particularly important. Several states have tried voluntary efforts to reduce polluted runoff from agricultural fields. So far, those efforts have failed, including recently in Ohio.

In this context, the new effort by California's Central Coast Regional Water Quality Control Board can be nationally significant. Fortunately, California's Porter-Cologne Act clearly regulates agricultural runoff. In fact, California historically took the lead: its water quality law predates – and laid the groundwork for – the federal Clean Water Act. Unfortunately, the state's regional water boards have a half-century history of abdicating their duty to effectively regulate agricultural contamination.

Over the past several decades, regional water boards in California have issued terribly flawed agricultural orders covering millions of acres. They have largely relied on voluntary measures organized by industry groups. Problems in these efforts have included a lack of specific limits on discharges to reduce environmental contamination, a total lack of urgency despite the magnitude of the problem, a lack of milestones and enforcement, and monitoring programs that are useless to regulators. For example, industry-run monitoring has aggregated and "anonymized" data from farmers, making it impossible to detect bad actors.

In several lawsuits by conservation, environmental justice, water quality, commercial and sport fishing groups, represented by the Stanford Environmental Law Clinic and the Golden Gate University Environmental Law and Justice Clinic that we direct, state courts have ordered water boards to address the flaws – including striking down a state regulatory program that lacks standards, milestones, and appropriate timelines to achieve clean water. An appellate court also ruled that regional water board orders must ensure that on-the-ground conditions do not continue to worsen, pursuant to anti-degradation requirements.

On February 21, as a result of one of the court rulings, the Central Coast Regional Water Board issued a new draft agricultural order. The coming months will be consumed by numerous exchanges of public and industry comments and staff responses. A final order is expected next year.

The critical challenge for the Central Coast Regional Water Board is to adopt numeric, enforceable – and enforced – limits for the application of nutrients and pesticides to agricultural fields. Research has shown that nitrogen is often applied at rates many times the amount that can be taken up by crops. Excess nutrients either disperse into the atmosphere to become potent greenhouse gasses or drain into groundwater and rivers to become dangerous contaminants. Pesticides are too often carelessly applied and run off to our rivers and streams, killing the life that should thrive there. Application limits should account for the many crops and soil types in this diverse industry. But it is time for California to regulate the nutrients and pesticides that are the largest source of water pollution in much of the state rather than relying on paper requirements that lead nowhere close to attaining clean water.

California's Central Coast includes Big Sur and Point Lobos – some of the most dramatic and famous coastlines in the world. In addition to its natural beauty, this region is known for its commitment to environmental health. It is also famously America's Salad Bowl. It's appropriate that the agricultural order from this region is emerging as perhaps the most important state-level effort in the nation to tackle the pollution that remains one of the nation's most serious unaddressed water quality challenges. The state, however, must recommit to its role as a leader in clean water.

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