

Questions for the Second Statewide Agricultural Expert Panel

Background

Water quality impacts associated with agriculture are complex and addressing them requires pooling and focusing the knowledge, expertise, and resources of all interested parties, including growers and their representatives, regulatory agencies, environmental advocates, and environmental justice communities. The State Water Resources Control Board (State Water Board) and the regional water quality control boards must develop and implement a long-term sustainable Irrigated Lands Regulatory Program that protects the quality of waters of the state while supporting the viability of agriculture. Collectively, with the help of our partners, the Water Boards made substantial progress in defining a science-based approach that we believe provides a solid foundation for our next steps. Due to the complexity of the impacts of agriculture on water quality, the Irrigated Lands Regulatory Program is constantly evolving.

In 2018, the State Water Board adopted [Order WQ 2018-0002](#) (Eastern San Joaquin Water Quality Order). Prior to the development of the Eastern San Joaquin Water Quality Order, the State Water Board convened an agricultural expert panel (the “First Agricultural Expert Panel”) to assess existing agricultural nitrate control program and to develop recommendations to ensure that on-going efforts are protective of groundwater quality. The First Agricultural Expert Panel delivered its [report](#) to the State Water Board in 2014. Based on the recommendations from the First Agricultural Expert Panel, the State Water Board established new statewide precedential requirements for the Irrigated Lands Regulatory Program in the Eastern San Joaquin Water Quality Order. Among these precedential requirements was the requirement for growers to report nitrogen applied (A) and nitrogen removed (R) values to their third-party group to calculate outliers based on similar crops and similar growing practices. The First Agricultural Expert Panel determined there was insufficient knowledge and data to set regulatory limits using the A/R metric. The Eastern San Joaquin Water Quality Order requires the use of A/R to determine which growers should receive additional education to improve management practices. The Eastern San Joaquin Water Quality Order additionally required the calculation of A-R.

In 2021, the Central Coast Regional Water Board adopted Order [R3-2021-0040](#), General Waste Discharge Requirements for Discharges from Irrigated Lands (2021 Central Coast Ag Order). The 2021 Central Coast Ag Order includes regulatory limits on nitrogen application and nitrogen discharge using an A-R metric. The 2021 Central Coast Ag Order also allows growers to factor in certain discounts of A and additional credit considerations for R. The State Water Board reviewed the Central Coast Ag Order on petition and remanded it to the Central Coast Regional Water Board (Order WQ 2023-0081).

In [Order WQ 2023-0081](#) (Central Coast Ag Water Quality Order), the State Water Board stated that, with the help of its partners and the recommendations of the First Agricultural Expert Panel's 2014 Report, it has "made substantial progress in defining a science-based, data-driven approach" for "developing and implementing a long-term sustainable irrigated lands regulatory program that protects the quality of waters of the state," but that there is still much more work to do. The Central Coast Ag Water Quality Order also expressed the State Water Board's intention to convene a second expert panel and, among other things, "task the expert panel to review the nitrogen applied and nitrogen removed data and evaluate the suitability of expanding the use of the multi-year A/R ratio target values and A-R difference values in our irrigated lands regulatory programs."

Questions:

1. Is there enough data and scientific research to set crop-specific nitrogen-related limits (e.g., A/R, A-R, or other limits) that are protective of groundwater quality and support a long-term sustainable Irrigated Lands Regulatory Program? What metrics and methodology would be used for developing those limits and what would the limits be? What additional data should be collected and/or what additional research needs to be conducted to further support the development of nitrogen-related limits that are protective of groundwater quality and support a long-term sustainable Irrigated Lands Regulatory Program?
2. Based on the data and scientific research that is currently available, what series of increasingly protective interim nitrogen-related limits can be set now to ensure that all growers make progress towards nitrogen-related limits that are protective of groundwater quality and support a long-term sustainable Irrigated Lands Regulatory Program?
3. Are there any scientific or technical considerations or advances related to the factors discussed in the First Agricultural Expert Panel's 2014 Report that the State Water Board should take into account in future policy decisions regarding implementation issues or the direct enforceability of the nitrogen-related limits described above?
4. Is A-R a scientifically appropriate metric to evaluate and quantify nitrogen discharges to groundwater (either on its own or used in conjunction with A/R)? Are there any other methods or metrics that could help quantify nitrogen discharges?
5. The Eastern San Joaquin Water Quality Order includes additional aspects not specifically recommended by the First Agricultural Expert Panel. For example, the Order requires the submission of INMP summary tables.
 - a. Are these tables, as they currently stand, an effective tool for evaluating A and R data?

- b. Is the INMP data that is being reported, including the format for that data reporting, effective for the Water Board to assess reductions in nitrogen discharges to groundwater and improvements in management practices, both on an individual grower basis and an overall basis? Is the data capable of being used to confirm that follow up actions are being appropriately prioritized (e.g., by distinguishing between overapplication on large farms vs. overapplication on small farms)?
 - c. What improvements should be made (if any) to data collection, reporting practices and quality assurance procedures?
 - d. Order WQ 2018-0002 directs Regional Boards to periodically audit the Third Party's anonymous INMP records by spot checking that the field-level A and yield data reported is being accurately transcribed and converted into A/R and A-R in the data tables submitted to the Board. For the INMP data being collected through anonymous identifiers, what level of auditing is necessary to ensure the data that's submitted can be relied upon? Are there any improvements that can be made to ensure the data is accurate and reliable?
6. The 2021 Central Coast Ag Order established nitrogen application limits (AFER) based on percentiles of known grower practices in the region and considered the California Fertilization Guidelines on the California Department of Food and Agriculture website: California Crop Fertilization Guidelines. This approach was remanded in the Central Coast Ag Petition Order. Is using AFER in this manner an appropriate metric for interim limits to protect groundwater? If yes, what should those limits be?
7. The 2021 Central Coast Ag Order included discount factors to A (compost [ACOMP], organic fertilizer [AORG]), additional components of R (RSCAVENGE, RTREAT, and ROTHER), and excluding nitrogen in irrigation water from the calculation of total nitrogen applied in compliance pathways. Are the discount factors and additional components of R included in the 2021 Central Coast Ag Order's compliance pathways appropriate measurements to include in A and R calculations when measuring the potential to discharge nitrogen to groundwater and, if so, are these applicable to use statewide?
 - a. Does including the discount factors allow for a full accounting of the nitrogen that has the potential to discharge to groundwater?
 - b. Will including these additional components of R result in valid and comparable A/R and A-R values between different growers?
 - c. What are ways to incentivize the use of compost, organic fertilizers, cover crops, other treatments, etc., that properly account for these practices in the

- calculations of the potential to discharge nitrogen to groundwater (e.g., A/R and A-R)?
- d. Is incentivizing the use of nitrogen in irrigation water by excluding it from the calculation of total nitrogen applied the most appropriate approach for accounting for and controlling potential discharges to groundwater and reducing the overall concentrations of nitrates in groundwater?
8. Is there enough data and scientific research to conclude that small and/or small diversified farms are operated in a fundamentally different manner that results in a reduced water quality impact compared to larger farms, on a per acre basis? If yes, what criteria could be used to identify the operations that have reduced water quality impacts?
 9. As summarized in [footnote 33](#) of the Central Coast Ag Water Quality Order, the Eastern San Joaquin Water Quality Order contains exemptions from its precedential nitrogen management requirements for growers whose nitrogen-related practices do not impact water quality, and also gives the regional boards the discretion to allow additional time or alternative methods for three categories of growers to submit their R data. Is there enough data and scientific research that would support any other exceptions to, or alternative methods for complying with, the precedential nitrogen management requirements in the Eastern San Joaquin Water Quality Order or any nitrogen-related limits or other requirements recommended by the Expert Panel?