

Second Statewide Agricultural Expert Panel

Document Log

9/18/2025

The following is a comprehensive list of documents provided to the Second Statewide Agricultural Expert Panel (Panel). Materials include, but are not limited to, background regulatory information, program data, and information requested by the public. This log will be updated as new materials are added. Materials without a listed public access link can be requested by emailing DWQ-ILRP@Waterboards.ca.gov. Some documents are protected by copyright from scientific journals and will only be provided for in-person viewing at the CalEPA Headquarters Building located at 1001 I St., Sacramento, CA 95814.

Document Title	Description/Notes	Public Access Link
Conclusions of the Agricultural Expert Panel (2014)	First Agricultural Expert Panel recommendations	https://www.waterboards.ca.gov/water_issues/programs/agriculture/docs/ILRP_expert_panel_final_report.pdf
CDFA California Crop Fertilization Guidelines	California Crop Guidelines; Field crops and vegetables - Scientist of UC Davis and support of CDFA	https://www.cdfa.ca.gov/is/ffldrs/frep/FertilizationGuidelines/
ESJ Water Quality Order (Order No. WQ-2018-0002)	Waste Discharge Requirements General Order No. R5-2012-0116	https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2018/wqo2018_0002_with_data_fig1_2_appendix_a.pdf
Central Coast Water Quality Order (Order No. WQ-2023-0081)	State Water Board reviews on its own motion General Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2021-0040 issued by the Central Coast Water Board	https://www.waterboards.ca.gov/public_notices/petitions/water_quality/docs/2023/wqo2023-0081.pdf

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Region 3 Agricultural Order 4.0	General Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2021-0040	https://waterboards.ca.gov/centralcoast/water_issues/programs/ilp/regulatory_information.html
Region 3 Agricultural Order 4.0 - Attachment A: Findings	General Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2021-0041	https://waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_a.pdf
Region 3 Agricultural Order 4.0 - Attachment B: Monitoring and Reporting Program	General Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2021-0042	https://waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_b.pdf
Region 3 Agricultural Order 4.0 - Attachment C: Acronyms, Abbreviations, and Definitions	General Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2021-0043	https://waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_c.pdf
Region 3 ILP Webpage on TNA and INMP Reporting	Hosts guides, instructions and tools in multiple languages to assist growers and consultants with reporting	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/tna_inmp.html
Region 3 TNA Data	Data exported from GeoTracker on August 21, 2025. Eleven (11) years of grower reported data.	
Region 3 TNA Data Dictionary	Data dictionary for exported TNA data	
Region 3 TNA Reporting Instructions	Provides guidance on the information necessary to submit the TNA Report and instructions on how to report in GeoTracker	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/tna/tna_instructions.pdf
Region 3 INMP Data	Data exported from GeoTracker on August 21, 2025. Two (2) years of grower reported data.	

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Region 3 INMP Data Dictionary	Data dictionary for exported INMP data	
Region 3 INMP Reporting Instructions	Provides guidance on the information necessary to submit the INMP Summary Report and instructions on how to report in GeoTracker	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/tna/inmp-instructions.pdf
Region 3 Well Monitoring Data	Data exported from GeoTracker on August 21, 2025. Eleven (11) years of grower reported data.	
Region 3 Well Monitoring Reporting and Guidance	Provides guidance on the information necessary to complete and submit well monitoring and reporting in GeoTracker.	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/groundwater_quality_monitoring_and_reporting.html
Region 3 ACF Reporting Instructions	Provides guidance on the information necessary to submit the ACF Report and instructions on how to report in GeoTracker	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/resources/4growers/acf_instructions.pdf
Region 3 eNOI Instructions	Provides guidance on the information necessary to submit the electronic Notice of Intent (enrollment information) and instructions on how to report in GeoTracker	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/enoi_instructions.pdf
Region 3 Crop Nitrogen Removal conversion coefficient standard protocols	Standard protocols developed in coordination with Michael Cahn and Richard Smith that must be followed for a grower to develop a crop conversion coefficient	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/tna/n_rmvl_cffcnt_prcls.pdf

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Region 3 INMP Exemptions Technical Report Approval Process	There are three (3) exemptions outlined in the Agricultural Order that can exempt growers from having to report certain information in sections of the Irrigation and Nutrient Management Plan (INMP) Summary Report. This guidance document specifies the minimum required information that must be included in a technical report and the approval process.	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/2023/nmp-reporting-exemptions.pdf
Region 3 TNA and INMP Summary Report	Central Coast Water Board Technical Report on Total Nitrogen Applied (TNA) and Irrigation and Nutrient Management Plan (INMP) Summary Report Data	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/r3-ar-technical-report.pdf
Region 3 Irrigated Lands Program Dashboard	Irrigated Lands Program - Dashboard for Grower Reporting & Water Quality	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/dashboard.html
Crop Improvement and Protection Research: Cover Crops Nitrogen Scavenging Credits	Cover Crop Research: Dr. Eric B. Brennan	https://www.ars.usda.gov/pacific-west-area/salinas-ca/crop-improvement-and-protection-research/people/eric-b-brennan/ag-order-40-regulation-resources-and-research/
Region 5 INMP Data	several files: INMP data for 13 coalitions over 4 reporting years	
Region 7 INMP Data	several files: INMP data over 2 reporting years	
Region 8 INMP Data	several files: INMP data over 1 reporting year	
2024 Staff Data Report	Analysis of Available Irrigated Lands - Regulatory Program (ILRP) Nitrogen Data	https://waterboards.ca.gov/water_issues/programs/agriculture/docs/ilrpdatareport.pdf

Document Title	Description/Notes	Public Access Link
Betteravia Farms Trial	Presentation slides submitted by public comment	
Comprehensive Isotopic Analyses of Sources, Flow Paths, and Geochemical Processes Affecting Nitrate in Central Coast Groundwater (by Lawrence Livermore Nat'l Lab)	Flow and Paths of Geochemical Process - Affecting Nitrate - Central Coast Groundwater	https://water.llnl.gov/sites/water/files/2021-02/CCWB_LLNL_report_final_0.pdf
Technical Report 2: Nitrogen Sources and Loading to Groundwater (of the UC Davis/UC ANR Nitrate Report)	The Implementation of Senate Bill X2 1 - Nitrogen Sources to Groundwater	https://ucanr.edu/sites/groundwaternitrate/files/139110.pdf
Nitrogen Crop Coefficients (Geisseler 2016)	Nitrogen Concentrations in Harves Plants - A Literature Review	http://geisseler.ucdavis.edu/Geisseler_Report_2016_12_02.pdf
Technical Memorandum - Nitrate in GW in Palo Verde Outfall Coalition Region (by MLJ Consulting)	Prepared by MLJ Consulting on behalf of the Palo Verde Outfall Coalition in Region 7	
Improving Nitrogen Use Efficiency in Lettuce Production (by Smith and Cahn; UCCE and UC Davis)	Regional Water Quality Control discussing nitrate losses from Surface and Groundwater from Vegetable farming Operations	https://calasa.ucdavis.edu/files/73479.pdf#page=44

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Evaluation of N Uptake and Water Use of Leafy Greens Grown in High-Density 80-inch Bed Plantings and Demonstration of Best Management Practices (by Smith, Cahn, and Hartz; FREP)	Providing evaluations of vegetables crops grown on high-density - Coastal Production District	https://www.cdfa.ca.gov/is/ffldrs/frep/pdfs/completedprojects/12-0362-SA_Smith.pdf
Nutrient and Water Use of Fresh Market Spinach (by Smith, Cahn, and Hartz; UCCE and UC Davis)	Fresh Market Spinach and it's production challenges	https://bpb-us-e1.wpmucdn.com/wordpressua.uark.edu/dist/0/310/files/2017/06/Nutrient-and-water-use-of-fresh-market-spinach-Richard-Smith.pdf
Addressing Nitrate in California's Drinking Water (UC Davis/UC ANR Nitrate Report)	Nitrate for California's Drinking Water - Focus on Tulare Lake Basin and Salinas Valley	https://ucanr.edu/sites/default/files/2012-03/138956.pdf
Relation of nitrate contamination of groundwater with methaemoglobin level among infants in Gaza (by Naser, Khoudary)	Cross-Sectional and Analytical study to determine the factors associated with high levels of methaemoglobin in infants	https://pubmed.ncbi.nlm.nih.gov/18290391/
Case Studies in Environmental Medicine Nitrate/Nitrite Toxicity (by ATSDR, US DHHS)	A document series of self-instructional module to increase the care providers knowledge of hazardous substances	https://archive.cdc.gov/www_atsdr_cdc_gov/csem/nitrate_2013/docs/nitrite.pdf

Document Title	Description/Notes	Public Access Link
Social Disparities in Nitrate-Contaminated Drinking Water in California's San Joaquin Valley (by Balazs, Morello-Frosch, Hubbard, Ray)	A research on drinking water in the United States examined the disproportionate exposures contaminants faced by low-income communities	https://pmc.ncbi.nlm.nih.gov/articles/PMC3230390/pdf/ehp.1002878.pdf
Cover Cropping in the SGMA Era:	A Comprehensive Overview of Water Impacts, Policy Implications and Recommendations for California Water Managers	https://www.cdfa.ca.gov/oefi/efasap/docs/2024/Sustainable_Conservation-Cover-Crop-SGMA-Report.pdf
Predicting cereal cover crop biomass using shoot length in California vegetable systems (by Brennan and Smith)	An article of crop benefits receiving nitrogen scavenging credits for cover cropping	https://acsess.onlinelibrary.wiley.com/doi/full/10.1002/ael2.20099
Land-use change and costs to rural households: a case study in groundwater nitrate contamination (by Keeler and Polasky)	A case study in Groundwater nitrate contamination	https://iopscience.iop.org/article/10.1088/1748-9326/9/7/074002/pdf
Eight Blue Babies (by Knobeloch)	An article of Blue Baby Syndrome - Condition that occurs when the hemoglobin is found in infants blood cells	https://www.researchgate.net/profile/Lynda-Knobeloch/publication/10814458_Eight_blue_babies/links/02bfe510736ecce3b8000000/Eight-blue-babies.pdf
Blue Babies and Nitrate-Contaminated Well Water (by Knobeloch, et. al)	Blue Baby Syndrome - Condition that occurs when the hemoglobin is found in infants blood cells	https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.00108675

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The Human Costs of Nitrate-contaminated Drinking Water in the San Joaquin Valley (by Pacific Institute 2011)	A Nonprofit that works to create sustainable communities and a healthier planet	https://pacinst.org/wp-content/uploads/2013/02/nitrate_contamination1.pdf
Nitrate and Nitrite in Drinking Water (by OEHHA)	Providing information on health effects from contaminants in California's drinking water	https://oehha.ca.gov/media/downloads/water/chemicals/phg/nitratephg051118.pdf
Environmental justice and drinking water quality: are there socioeconomic disparities in nitrate levels in U.S. drinking water?	The goals of this study are to identify determinants of nitrate concentrations in the U.S. community water systems	https://link.springer.com/article/10.1186/s12940-018-0442-6
Exposure-based assessment and economic valuation of adverse birth outcomes and cancer risk due to nitrate in United States drinking water (by Temkin, et. al)	Health impacts such as, birth adversities and elevated colorectal cancer due to nitrate in drinking water	https://www.sciencedirect.com/science/article/pii/S001393511930218X
NRCS Conservation Practice Standard Nutrient Management Code 590 (2020)	Manage rate, source, placement and timing of plant nutrients and soil amendments while reducing environmental impacts	https://efotg.sc.egov.usda.gov/api/CPSFile/27020/590_CA_CPS_Nutrient_Management_2020
Nitrates and Nitrites (by US EPA)	A document explaining the chemicals used in fertilizers to kill rodents and as a food preservatives	https://archive.epa.gov/region5/teach/web/pdf/nitrates_summary.pdf

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Nitrates in Municipal Water Supply Cause Methemoglobinemia in Infant (by Vigil, et. al)	Article on infant ingesting water containing high levels of nitrate	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1919725/pdf/pubhealthreporig00060-0089.pdf
Survey of Literature Relating to Infant Methemoglobinemia Due to Nitrate-Contaminated Water (by Walton)	Two cases of infant methemoglobinemia in 1945, caused by possible heart diseases	https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.41.8_Pt_1.986
Nitrate and nitrite in Drinking-water (by World Health Organization)	A background document for development of WHO guidelines for drinking water quality	https://iris.who.int/bitstream/handle/10665/75380/WHO_SDE_WSH_04.03_56_eng.pdf
Mustard Cover Crop Growth and Weed Suppression in Organic, Strawberry Furrows in California (Brennan, Smith)	Materials and Methods - Site description, field preparation and experimental design statistical analysis	https://journals.ashs.org/view/journals/hortsci/53/4/article-p432.xml
Winter cover crops in a vegetable cropping system: Impacts on nitrate leaching, soil water, crop yield, pests and management costs (Wyland et al)	The effect of altering surface soil dynamics, using a winter cover crop rotation, on biotic and abiotic characteristics of the soil profile	https://www.sciencedirect.com/science/article/abs/pii/S0167880996010481
Scientists, growers assess trade-offs in use of tillage, cover crops and compost (Jackson et al)	An inside look into soil quality research that focuses on soil organic matter. The activity and function, and related chemical and physical properties.	https://escholarship.org/uc/item/8tv45119

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In lettuce production, winter cover crops can decrease soil nitrate, leaching potential (Jackson et al)	An annual row crop production during winter storms and spring irrigation	https://www.researchgate.net/publication/340425163_In_lettuce_production_winter_cover_crops_can_decrease_soil_nitrate_leaching_potential
Winter cover crops to minimize nitrate losses in intensive lettuce production (Jackson et al)	Recovery of Nitrogen from legume residues decomposing in soils sown to wheat in the field	https://www.cambridge.org/core/journals/journal-of-agricultural-science/article/abs/winter-cover-crops-to-minimize-nitrate-losses-in-intensive-lettuce-production/1B0B1F1710ADE80015AA93D50C3A168D#access-block
Winter-killed Cereal Rye Cover Crop Influence on Nitrate Leaching in Intensive Vegetable Production Systems (Heinrich)	The breakdown on what nitrate can do by leaching with winter rains when fields are left fallow	https://journals.ashs.org/view/journals/horttech/24/5/article-p502.xml
The Effect of Cover Crops and Fertilization with Ammonium Nitrate on Corky Root of Lettuce (Van Bruggen et al)	Improvement in soil structure - Nitrate content in soil or lettuce tissue	https://www.apsnet.org/publications/PlantDisease/BackIssues/Documents/1990Articles/PlantDisease74n08_584.PDF
Comparison of Rye and Legume–Rye Cover Crop Mixtures for Vegetable Production in California (Brennan et al)	A complex growth of legume-rye mixtures	https://access.onlinelibrary.wiley.com/doi/epdf/10.2134/agronj2010.0152
Winter Cover Crop Seeding Rate and Variety Affects during Eight Years of Organic Vegetables (Brennan, Boyd)	Winter cover crops improve by scavenging residual soil - shoot nitrogen accumulation of rye	https://access.onlinelibrary.wiley.com/doi/epdf/10.2134/agronj2011.0331

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Biochar, soil and land-use interactions that reduce nitrate leaching and N₂O emissions: A meta-analysis	Collecting data of what Biochar can reduce in both nitrous oxide and nitrate	https://www.sciencedirect.com/science/article/abs/pii/S0048969718339330?via%3Dihub
Crop-Specific Multi-Year Acceptable Ranges of Applied Nitrogen Relative to Nitrogen Removed	A draft proposal from Central Valley Coalitions for acceptable ranges for nitrogen applied and nitrogen removed calculations	https://content.govdelivery.com/attachments/CAWRCB/2025/01/21/file_attachments/3139025/20241007_ARAcceptableRanges_Report.pdf
Recognition and Support of Indigenous California Land Stewards, Practitioners of Kincentric Ecology	Indigenous people in their efforts to advance the rights and opportunities of the stewards of biocultural diversity and sustainable land management practices	https://www.firstnations.org/publications/recognition-and-support-of-indigenous-california-land-stewards-practitioners-of-kincentric-ecology/
Soil biota enhance agricultural sustainability by improving crop yield, nutrient uptake and reducing nitrogen leaching losses (Bender, van der Heijden)	An investigation of soil biota on nutrient leaching plant performance	https://besjournals.onlinelibrary.wiley.com/doi/epdf/10.1111/1365-2664.12351
Nutrient Uptake of Brussels Sprout (by Smith, UC ANR)	Could not be found, link broken - 'Page Not Found'	https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=16850
Wine Institute Comments (Noelle Cremers)	Submitted by the Wine Institute and referenced at the August 8th kick-off meeting	

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NGO Coalition - Scientific Literature Review for Questions Posed to the Upcoming Second Statewide Agricultural Expert Panel	Submitted by a Non-Governmental Organization Coalition and referenced at the August 14th kick-off meeting	
Literature Review of Questions Assigned to the Expert Advisory Panel 2025, Prepared by Daniel Rath, Ph.D.	Submitted by Dr. Rath and referenced at the August 14th kick-off meeting	
Public Comment Letters	Public comments received for the draft panel questions and call for suggested panel expertise/data	
Presentations from 8.8.25 Meeting	Presentation slides from the August 8th kick-off meeting	
Presentations from 8.14.25 Meeting	Presentation slides from the August 14th kick-off meeting	
NRDC 7.11.25 Letter to Water Board Requesting Additional Coalition Analysis	Comment letter submitted by the Natural Resources Defense Council	
NRDC 5.20.25 Comments on Data Analysis Prepared for the Second AEP	Comment letter submitted by the Natural Resources Defense Council	