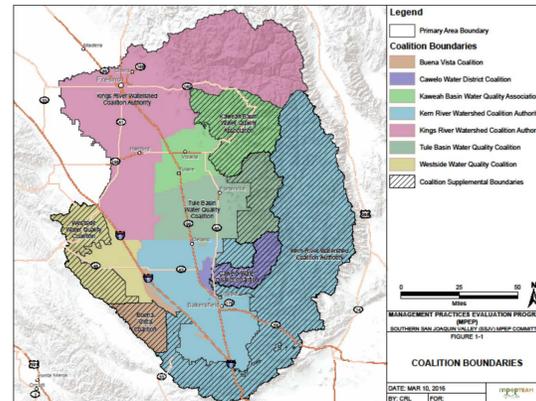


The Southern San Joaquin Valley (Tulare Lake Basin) Management Practices Evaluation Program

Background

The Southern San Joaquin Valley (SSJV) Management Practices Evaluation Program, or MPEP, was devised to complement other components of the Region 5 (Central Valley) Water Quality Control Board Irrigated Lands General Order. This facet of the Order, along with the Groundwater Quality Management Plans, contains most of the actions to actually protect water quality, along with the most rigorous performance demonstrations. The MPEP moves beyond simple metrics that might indicate a problem to identifying steps required to solve the problem.

Seven coalitions, representing approximately 1.85 million acres of irrigated land south of Fresno, formed the SSJV MPEP Committee to implement the MPEP. Their MPEP Workplan has been extensively discussed with State and Central Valley Water Board staffs and with technical partners at US Department of Agriculture Natural Resources Conservation Service (NRCS), University of California (UC), California Department of Food and Agriculture (CDFA), and California State University (CSU). The Committee and technical team have also reached out to other irrigated lands coalitions and the dairy industry to exchange ideas and promote consistent approaches.

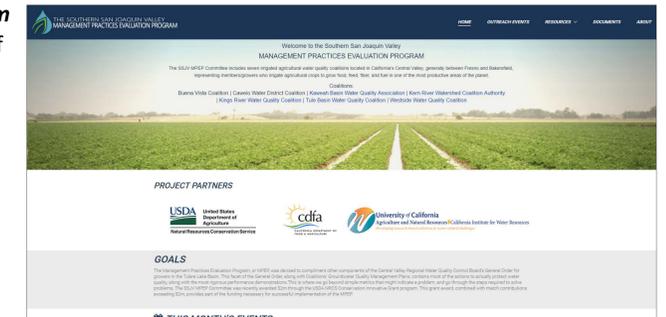


Nitrogen Management Tools and Resources

Outreach to share findings with growers and grower advisers is critical to the success of the SSJV MPEP. The MPEP recognizes that growers have a diversity of established and trusted sources for information, including public- and private-sector experts, other growers, and commodity groups. MPEP outreach will leverage these resources through collaboration and partnership. In addition, several new tools and resources are being developed to help inform growers and their advisers.

www.agmpep.com

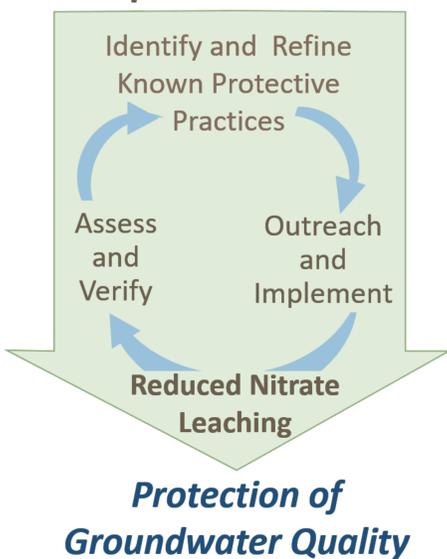
The SSJV MPEP launched agmpep.com in early 2017. It provides a number of resources for growers and advisers looking for information about protective practices, learning opportunities, the ILRP, and reporting requirements. Current features include an interactive calendar of learning events, information about management practices, and links to many online references and tools.



Minimizing Nitrate Leaching from Crop Root Zones

Substantial information related to careful management of nitrogen (and the irrigation water that may carry it beyond the root zone) is available in literature and through the extensive hands-on irrigation and nutrient management expertise of growers and grower advisers. Matching this information to applicable field situations and extending it to additional growers through early outreach is an MPEP priority. A concurrent effort will identify, refine, and assess the efficacy of practices to retain and use applied nitrogen in the particular crop, soil, climate, and management settings of the SSJV. The MPEP is being implemented through the following three-part approach to protect groundwater by minimizing nitrate leaching:

SSJV MPEP Implementation



- **Identify known protective practices and refine those practices as new information is gathered.** Existing knowledge will be collected from industry (e.g., commodities groups), public sector expertise (e.g., UC Cooperative Extension and Experiment Station, CSU, and USDA NRCS), literature, and the coalitions and their membership. Technical experts will help with focused field studies, as necessary, to adjust and identify management practices.
- **Share protective practices with growers.** Priority will be given to practices that growers can readily use and that have greatest potential to protect groundwater quality, and to leveraging the broad range of existing information-sharing resources.

Increased implementation of protective practices will lead to reduced nitrate leaching across the SSJV landscape.

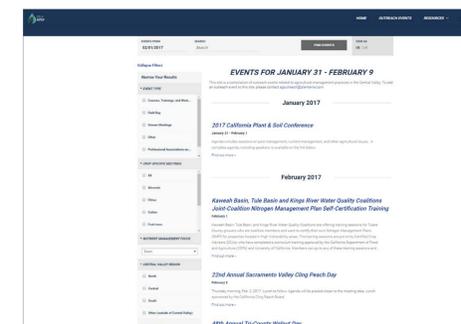
- **Assess implementation of protective practices and verify that they protect groundwater quality.** The Soil and Water Assessment Tool (SWAT) will be calibrated to accurately represent SSJV farming conditions; then results will be validated with field observations. In this way, crop, soil, climate, and management information can be integrated to demonstrate what is happening at the field and landscape scales, as required by the General Order. Verification will be informed by data from the growers through Farm Evaluations and Nitrogen Summary Reports.

Management Practice Categories

- Right Form, Right Rate, Right Timing, and Right Placement of N (4Rs)
- Cover Crop for N Recovery
- Deep-rooted Crops in Rotation
- Irrigation and Drainage Design
- Irrigation Operation and Scheduling
- Account for Whole N Supply
- Improved Storage and Handling of Fertilizers
- Right Rates of Manure and Compost
- Enhance/Maintain Soil Health
- Maintain Vigorous Crop to Use N

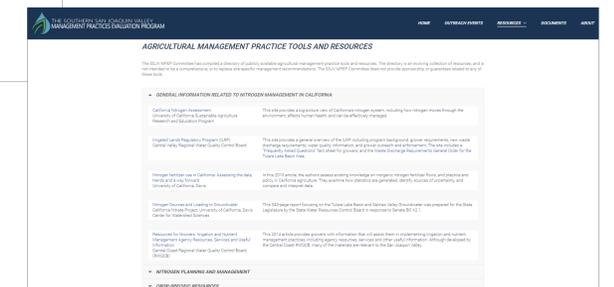
Interactive Calendar of Events

The calendar includes field days, crop-specific seminars, profession association meetings, and other events. Users may search for events by crop, location, event type, and other criteria.



Online Resource Directory

The directory brings together links to information and resources from experts throughout agriculture in academia, industry, government, and crop advisers. Additional resources will be added over time.



Coming soon to agmpep.com

Interactive tools for growers and their advisers to use in determining nitrogen applications, for example:

Crop Yield-to-nitrogen-removed Calculator
Using grower input, the calculator will estimate nitrogen removed (R) and the ratio of nitrogen applied (A) to nitrogen removed (A/R), based on yield and other inputs for a single crop/field or many. The calculator will also provide performance context, in the form of box and scatter plots of results from similar fields of the same crop within the selected coalition.

SSJV MPEP Committee Coalitions

Buena Vista Coalition Cawelo Water District Coalition Kaweah Basin Water Quality Association Kern River Watershed Coalition Authority
Kings River Watershed Coalition Authority Tule Basin Water Quality Coalition Westside Water Quality Coalition

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USDA NRCS Conservation Innovation Grant

The SSJV MPEP Committee was awarded \$2 million from the USDA NRCS Conservation Innovation Grant program to increase the use of management practices that reduce nitrate leaching. Growers' and cooperators' contributions will exceed this funding.

