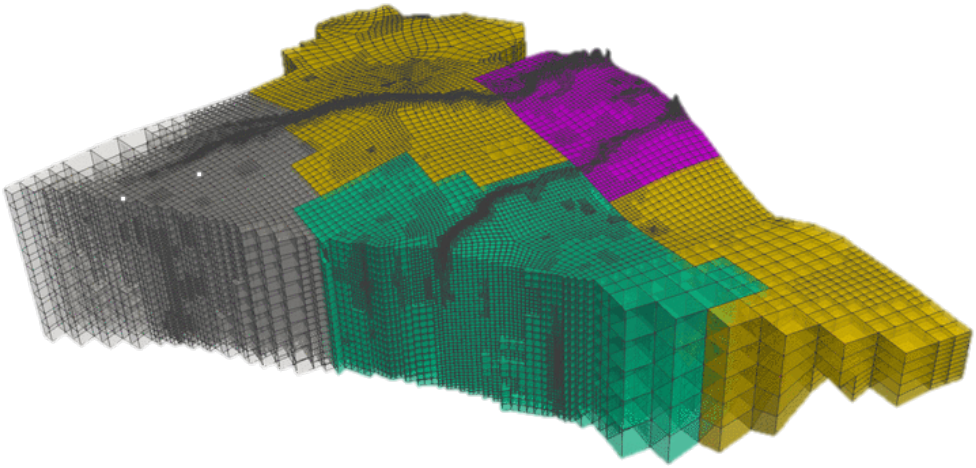

GAMA PRESENTS
CV-NPSAT

Understanding, managing, and regulating nonpoint source pollution of groundwater is a challenge for California. Nonpoint sources of groundwater pollution encompass tens to hundreds of thousands of individually managed plots, fields, and other land parcels, covering about 10 million acres in California. Models are used to assess the impacts of land management improvements on long-term outcomes at water supply wells, but scaling is an issue, as well as computational resources.

The Nonpoint Source Assessment Toolbox (NPSAT) is an open-source groundwater modeling framework developed by the University of California Davis to serve as an alternative, efficient approach to standard groundwater contamination models. It evaluates the fate and transport of nonpoint source (NPS) contaminants (such as nitrate and salts) leaching to groundwater from agricultural, urban, and natural land uses, in irrigation, public, and domestic supply wells through "on-the-fly" evaluations of user-defined nonpoint source contaminant leaching scenarios.

The Central Valley application of NPSAT, *CV-NPSAT*, computes 400 years of future contaminant transport to 20,000 production wells and over 60,000 domestic wells in the Central Valley. It can be used by non-technical and technical stakeholders to better understand future groundwater quality as a function of changes to nitrate load and may assist with the evaluation of potential improvements in water quality associated with changes in land use and agricultural practices.

Upcoming Online Webinar!

March 19, 2026

1:00 pm - 4:00 pm

GAMA Program Special Studies Project with UC Davis Groundwater

RSVP here!

(RSVP to get zoom meeting link)

PRESENTED BY DR. THOMAS HARTER AND HIS TEAM

March 19, 2026
1:00 pm – 4:00 pm

California Water Boards

UCDAVIS CENTER FOR WATERSHED SCIENCES

waterboards.ca.gov/gama

Meeting Agenda

1:00 – 1:20 pm	GAMA Staff introduce project and background
1:20 – 2:10 pm	Dr. Harter and UC Davis team of scientists present CV-NPSAT methodology
2:10 – 3:00 pm	Dr. Harter and team present use of the tool with several use cases and applications (SGMA, ILRP, regulatory)
3:00 – 4:00 pm	Optional hands-on tutorial and Interactive Q & A

Desired Outcome of Webinar

Attendees and future viewers of this webinar will be introduced to the CV-NPSAT tool and can ask any questions about its use. Feedback is welcome for any future improvements. Methodology will be explained as well as the user interface, including explanations of the tool's features and settings.

This work was partially funded by the California State Water Resources Control Board Groundwater Ambient Monitoring and Assessment (GAMA) Program's Special Studies Project.

The GAMA Program's mailbox (**gama@waterboards.ca.gov**) will be monitored during the webinar, as well as the meeting client's chat function.

Dr. Thomas Harter holds the Nora S. Gustavsson Endowed Professorship in Water Resources at the University of California, Davis after serving as the Robert M. Hagan Endowed Chair for Water Policy and Management from 2007-2020. He is Distinguished Professor and Professor of Cooperative Extension at the Department of Land, Air, and Water Resources. Dr. Harter's research and extension emphasize the nexus between groundwater and agriculture. His research group focuses on nonpoint-source pollution of groundwater, sustainable groundwater management, groundwater and vadose zone modeling, groundwater resources evaluation under uncertainty, groundwater-surface water interaction, and contaminant transport.

Georgios Kourakos holds a PhD in groundwater hydrology from the National Technical University of Athens, Greece. Since 2010, he has been a member of Dr. Thomas Harter's research group, where he works as a groundwater modeler, scientific programmer, and GIS specialist, supporting the analysis of complex, large-scale hydrogeologic systems. His research interests focus on applied groundwater flow and transport modeling, advanced data analysis and visualization, high-performance and parallel computing, numerical optimization, and the development of robust computational tools for real-world water resources applications.