



# SOUTHERN WILLAMETTE VALLEY GROUNDWATER MANAGEMENT AREAS

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## SPECIAL POINTS OF INTEREST

- Landowner outreach
- Committee Members
- Agricultural area management plans
- Barriers to Nitrate Testing

## Editor's Corner

We want to hear from you. If you have a topic you'd like to read more about or would like to submit an article contact Basin Specialist Becky Anthony at 541-686-7119 or [anthony.becky@deq.state.or.us](mailto:anthony.becky@deq.state.or.us). Please keep cover page articles to 500 words. All other submissions should be 200 words or less.

## WHAT'S HAPPENING THIS SUMMER?

We are now in full swing on the GW-20 well project. To date we have used existing data to determine the five-year time-of-travel pathway for groundwater to the well, identified agricultural lands within that pathway, and initiated contact with the landowners. We've done some limited soil sampling to see what nitrate concentrations are present and

talked to farmers about their management practices. This has already led to discovering some practices that have likely leached nitrate into groundwater.

Technical issues with calculating reasonable aquifer characteristics and groundwater slope delayed the project for awhile, but we have now developed a method that

should be useable throughout the Southern Willamette Groundwater Management Area. The main resource needed to apply this type of project is time working with landowners. We expect to start looking at other candidate wells this fall to continue the project in other parts of the management area.

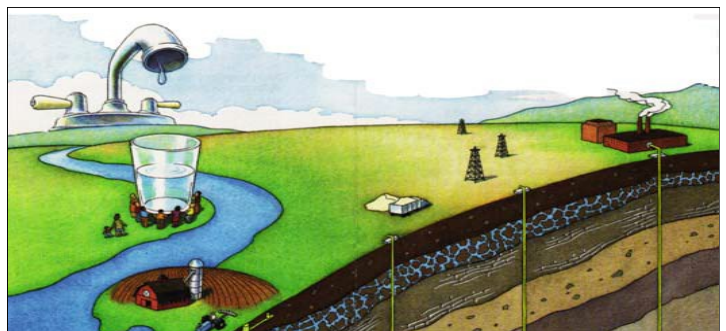
—Paul Measeles, ODA

## WE NEED COMMITTEE MEMBERS!!

Are you, or someone you know, interested in protecting groundwater and working with stakeholders to reduce groundwater contamination in the Groundwater Management Area? DEQ is looking for interested stakeholders to serve on the Southern Willamette Valley Groundwater Management Area Committee. The committee represents a balance of interests in the affected area and includes attendance at

biannual meetings, providing advice and assistance regarding ongoing research and implementation of the Groundwater Management Area Action Plan. Current vacancies in-

clude OSU Extension, local watershed councils, and the real estate industry. Additional interests or sectors may be considered. —Becky Anthony, DEQ



## AGRICULTURAL WATER QUALITY MANAGEMENT AREA PLANS

The Southern Willamette Valley Groundwater Management Area encompasses three distinct plans:

- Middle Willamette
- South Santiam
- Upper Willamette and Upper Siuslaw

Each Agricultural Water Quality Management Area Plan promotes voluntary actions and serves to document progress toward achieving water quality improvements over time, including progress to implement Groundwater

Management Area actions on agricultural lands. They also include rules requiring the protection of water quality and prevention and control of agricultural water pollution.

The Oregon Department of Agriculture reviews management area plans at least every two years with the assistance of local advisory committees and the soil and water conservation districts. The following Groundwater Management Area actions are underway or have been accomplished:



- Each Area Plan now includes Southern Willamette Valley Groundwater Management Area Actions
- Soil and water conservation districts within the Southern Willamette Valley

Groundwater Management Area have conducted workshops, developed written materials and conducted outreach with growers about how they can help reduce nitrates leaching into ground-

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## UNIVERSITY OF OREGON CAPSTONE PROJECT

In their second and final year, Master in Public Administration students at the University of Oregon participated in an applied Capstone research project spanning two terms. Students worked as a consultant group to address real-world policies or research projects for agencies at local, state, and federal levels in the public or nonprofit sectors. The terminal project serves as a way for students to grow their professional skills,

work as a team, and manage a project. Projects can vary from policy analyses, needs assessments, and evaluations.

DEQ contracted with the Department of Planning, Public Policy and Management during the 2016-17 academic year to bring three students on board to conduct research on residents' perceptions on groundwater within the GWMA. The research goal was to assist DEQ and other GWMA stake-

holders with crafting targeted public outreach and education to help inform the public about ways to mitigate potential health risks associated with nitrate-contaminated groundwater.

The research team developed a survey to learn about demographics, public perceptions, and information regarding treatment systems and effective outreach methods.

Masters student research-

ers designed a randomized survey for a sample frame of 327 rural residents that live outside of the municipal water service district. An identical survey was administered to a Test Group and Control Group. In addition to the survey, the Control Group was asked to bring a sample of their water to one of several testing facilities located in their area. The Test Group was asked to participate in a follow-up

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## AGRICULTURAL AREA PLANS, CONT. FROM PAGE 2

water.

- Benton Soil and Water Conservation District helped coordinate workshops to educate participants about the management area rules and practices to reduce nitrates. The district also collaborated to form an Agricultural Focus Group that helped inform our understanding of the social barriers and challenges to implementing groundwater management actions.
- Benton Soil and Water Conservation District secured an ODA Fertilizer Grant to supplement the Environmental Protection Agency's Regional Applied Research Effort grant to design a research study and install a number of lysimeters in the groundwater management area. The district is also monitoring several previously installed lysimeters. By

combining the two grants, the district is accomplishing:

- Documentation of current and recent agricultural practices at selected sites
- Monthly collection of soil water samples to be analyzed by DEQ
- Soil quality analysis of parcels in the study, to better assess the soil's health and tilth
- Development of critical information to be used for incorporating groundwater protection elements of the Nutrient Tracking Tool and conducting research-oriented workshops and meetings to share the results.

This approach results in additional understanding of the effectiveness of current fertilizer best management practices, vadose zone transport and groundwater protection.

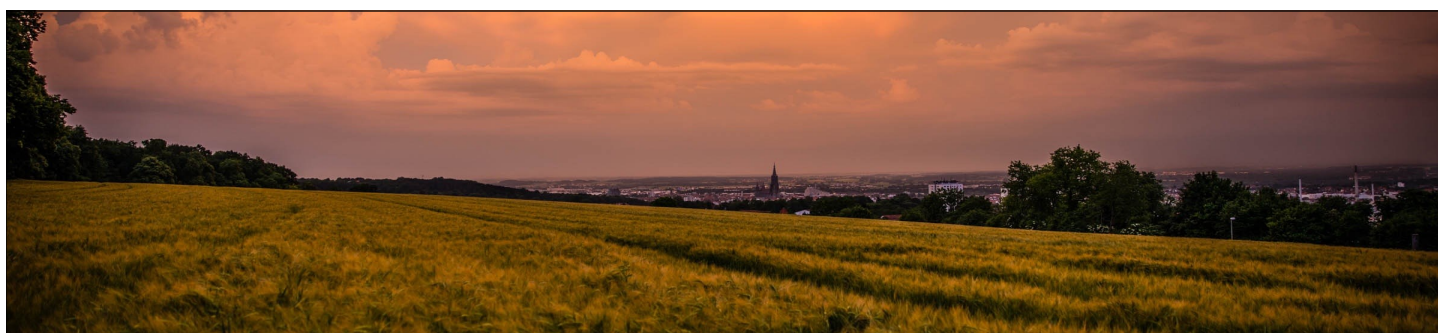


These actions will be an ongoing part of DEQ's Water Quality Program and the efforts of soil and water conservation districts to complete groundwater management actions.

To find a copy of the current Agricultural Water Quality Management Plan for each management area

If you would like to know more, or participate in the review of these plans, please contact Jo Morgan at 503-986-4712 or [jmorgan@oda.state.or.us](mailto:jmorgan@oda.state.or.us).

visit: <http://www.oregon.gov/ODA/programs/NaturalResources/AgWQ/Pages/AgWQPlans.aspx>.  
—Jo Morgan, ODA



## UNIVERSITY OF OREGON CAPSTONE PROJECT

Water Sample Visit, in which researchers visit participants at their residence to collect a tap water sample.

In terms of public awareness about the Groundwater Management Area, this research focused on answering the following questions: 1) how many people know that a problem exists, 2) to what extent are people concerned about the problem, and 3) whether either of the first two factors are associated with demographics.

In terms of Groundwater Management Area resident behavior, this research focused on answering the following questions: 1) how many people test their water for nitrate and know the risk level in their household, 2) how many people have installed a treatment system that effectively removes nitrate, and 3) which media sources do different demographics use to connect with the world.

A total of 39 participants completed the survey over the telephone. Thirty-eight participants completed mail-in surveys.

Participants were contacted nine days after taking the survey. In the Control Group, participants were asked whether they successfully delivered a sample of their water to a local testing facility. In the Test Group, participants were asked to confirm

a time for researchers to visit their home to take a water sample on a later date. Follow-up visits with participants will continue over the summer.

Researchers found that the two groups differed greatly during follow-up, indicating that *Time and Effort* represent significant barriers to residents testing their water. Most notably, none of the Control Group participants who agreed to deliver a sample did so, while all Test Group participants who agreed to a follow-up home visit had scheduled tentative appointments with researchers.

Results showed that three



independent variables impact concern: awareness of the issue, whether the property with the well was rented or owned by the occupants, and age of the home occupants.

The level of concern decreases for residents who own their homes compared to those who rent, while awareness increases if a participant is at least “maybe” aware of nitrate contamination. Age reduces concern, which is particularly concerning given that the average age of the sample respondent is 62.

Results from the study showed that receiving Groundwater Management Area literature sig-

nificantly raised awareness, while newspaper and social media were also very effective sources.

Data from the study suggested that the probability that a participant tests their water increases each year they have lived in the household. Conversely, this probability decreases once participants become aware of the location of testing facilities in their area.

For more information about the results of this study, please contact Becky Anthony at 541-686-7719 or [anthony.becky@deq.state.or.us](mailto:anthony.becky@deq.state.or.us).

—Tom Fiorelli, U of O