

College of Agricultural and Environmental Sciences

2013-2014 Endowed Chair Report

Robert M. Hagan Endowed Chair in Water Management and Policy

Dr. Thomas Harter, Cooperative Extension Specialist

Land, Air, and Water Resources

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Save The Date!

**Donor
Recognition &
College
Celebration**

Friday

OCTOBER

10

**3 - 5pm
Donor Recognition**

**5:30 - 8:30pm
College Celebration**

**Pavilion
UC Davis**

**More details to
follow soon. We
hope you will join us
so that we may thank
you in person!**

ENDOWMENT PURPOSE

In 2002, Robert M. Hagan made a gift to establish The Robert M. Hagan Endowed Chair in Water Management and Policy, along with a challenge to the College of Agricultural and Environmental Sciences and its volunteers to match it. Hagan's challenge was met, and then some, and the endowed chair was positioned in 2005. The faculty member holding the Robert M. Hagan Endowed Chair in Water Management and Policy develops and applies new methods and approaches to the resolution of water problems through innovative combinations of science, policy, and management; responds to inquiries from concerned persons and groups such as water district directors and staff, elected officials, state and federal government, agriculture, business, and other stakeholder groups; facilitates access to information and experts; and brings information needs to the attention of appropriate people and groups that may lead to expanded or modified research activities of greater value to the public.

RESEARCH

This past year we completed research that resulted in several publications related to our 2012 report to the legislature regarding Nitrate in California Drinking Water. That work is continuing with a review, assessment, modeling, and mapping effort of nitrate impacts throughout the entire Central Valley, and identifying agricultural management approaches to reduce nitrate emissions from agriculture to groundwater. We have continued to develop exciting new computational methods that will help us understand groundwater impacts. Field research projects on nutrient management with respect to groundwater protection have focused on rice (now completed), almonds, and pistachios. We further completed a multi-year effort to better understand dairy impacts to groundwater. This included work of international importance on the occurrence of microbes, antimicrobial chemicals, and antimicrobial resistance in pathogens that frequently are found in dairies.

With respect to groundwater resources management, we are engaged in helping the Scott Valley agricultural community, Siskiyou County, to develop groundwater management practices that will support the local agricultural community as well as the salmon habitats in the Scott River that are threatened by groundwater pumping for irrigation. We have developed an extensive hydrologic analysis of the

groundwater basin in Scott Valley and will be completing the Scott Valley Integrated Hydrologic Model over this coming year, a major instrument to guide future groundwater management in Scott Valley in a collaborative, locally based approach.

OUTREACH

My group has been instrumental in providing scientifically sound technical support in recent efforts on understanding the role of agriculture with respect to nitrate in drinking water. While much of these discussions have been in California, I have also been invited to speak to national audiences, most recently to a science-policy conference on water, climate change, and natural resources in Washington, DC. With the drought this year, I am also very engaged in discussions on the future of California's groundwater management. Despite my sabbatical leave during 2013, I have been engaged in frequent (and often invited) presentations to a wide range of audiences, but with a focus on local/regional/state/federal decision and policy makers, agency personnel, water districts, agricultural organizations and leadership, NGOs that work at the interface between groundwater and agriculture. In particular, I have co-organized the Contemporary Groundwater Issues Council of the Groundwater Resources Association. The Council has met in Davis in April 2013 and May 2014. The annual forum brings together state policy, management, and academic leaders in groundwater management and protection to identify critical groundwater-related policy, research, and management needs, and to identify the most important groundwater-related education, outreach, and extension needs in California. The Council events were both 100% financially supported by the Hagan Endowment. Attached is a complete list of outreach and extension activities since January 2013.

Extending Knowledge: Broadcast, Print or Electronic Media

Webpages managed:

<http://groundwater.ucdavis.edu>

<http://ag-groundwater.org>

<http://groundaternitrate.ucdavis.edu>

TV/Radio/Newspaper Interviews and News Media Articles/Videos/Broadcast:

- 1/22/2013: Jane Sooby, freelancer [California Certified Organic Farmers (CCOF) has asked me to conduct an interview about the implications of the nitrate report, if any, on organic farming's impact on nitrates in water.]
- 2/9/2013: Siskiyou Daily on Scott Valley groundwater management plan
- 3/9/2013: Interview with Malcom Terence, Two Rivers Tribune: <http://www.tworiverstribune.com/2013/03/groundwater-pumping-gets-protected-look-in-scott-valley-management-plan/>
- 4/18/2013: Ian Slatery and Lindi Ramsen - Interview filmed for and used in FILM: "Thirsty for Justice", <http://uujmca.org/advocacy/thirsty-for-justice-trailer/>
- 4/20/2013: Interview with Jeremy Miller, High Country News, published and Harter quoted in High Country News 45(11), p.12-17, June 24, 2013
- 5/28/2013: Interview with Daniel Kelly, The Fondriest, published June 11, 2013: <http://www.fondriest.com/news/uc-davis-groundwater-tool-helps-threatened-salmon-and-steelhead.htm>

- 6/17/2013: San Francisco Chronicle: "Will dairy industry resurgence fuel pollution?" – cited our dairy and SBX2 1 study.
- 3/7/2014: repost of Lund & Harter groundwater blog on Point Blue Science News, <http://www.prbo.org/sciennews/?author=2&paged=3#highlight>
- 4/8/2014: David Bienik, KCRA, TV3, Sacramento. On groundwater overdraft and management.
- 4/14/2014: Mark Grossi, Fresno Bee, San Joaquin Valley groundwater
- 4/23/2014: Georgina Gustin, CQ Roll Call, Congressional Quarterly/Roll Call – understanding California drought and groundwater
- 4/23/2014: Charles Piller, SacBee – boreholes as contamination pathways
- 4/23/2014: Ian James, California Desert Sun -
<http://www.desertsun.com/story/news/environment/2014/04/27/california-rethinks-groundwater/8251263/>
- 4/29/2014: Pauline Bartalone, Capitol Public Radio – two interviews to provide technical advice on research leading up to radio feature, <http://www.cpradio.org/22690>
- 5/1/2014: Debra Kahm, EENews, on drought and groundwater management
- 5/20/2014: Kate Galbraith, High Country News, San Francisco, on Scott Valley gw-sw connection
- 5/22/2014: Tom Knudsen, Sacramento Bee, on well log confidentiality

Videos

- UC ANR Drought Series: Groundwater and Surface Water Interactions under Shortage: What About My Groundwater During Drought? (recorded March 4, 2014), http://ciwr.ucanr.edu/California_Drought_Expertise/Insights_Water_and_Drought_Online_Seminar_Series/ https://www.youtube.com/watch?v=XYUuk8Ewcqc&index=7&list=PLlJfxpbNgIYQxsSCr0TFtk2hUr_p1LDv&noredirect=1
- UC Drought Summit: State Policy for Future Droughts, Panel Member, https://www.youtube.com/playlist?list=PLdOtCrI8WLPboeKOskcLLazWyF1Pt_mYK

UPCOMING ACTIVITIES

The department is currently undergoing major evolution - many of the faculty in the department are retiring or will be retiring within the next three years, so we are actively recruiting for many new faculty members. Samuel Sandoval Solis arrived in 2011 and is our new Water Management Cooperative Extension faculty (CE Specialist) and Professor. Last year, Daniele Zaccharia was hired as an Irrigation Systems Cooperative Extension faculty, and we hired Helen Dahlke as Assistant Professor in Integrated Hydrologic Sciences. This year, Yufang Jin came on board as Assistant Professor of Remote Sensing and Ecosystem Change. Additional recruitments are in progress. We are very excited about the future of the department and the opportunities that arise with our new faculty members.

THANKS

We are exceedingly grateful to the Robert M. Hagan Endowment. It continues to provide a prestigious framework and invaluable support for providing outreach and extension activities to the agricultural water community in

California. Over the past couple of years, we have been able to endowment funds due to the availability of other funding opportunities. This coming year, I will be planning for potentially leveraging the funds to activities that will support outreach and education around groundwater protection and management in agricultural regions.