

# DIANA T. WUENSHELL

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Quinney College of Natural Resources, Utah State University  
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## EDUCATION

**M.S.** Human Dimensions of Ecosystem Science and Management (cum laude,  
May 7, 2011)

**Graduate Certificate** - National Environmental Policy Act  
Dept. of Environment and Society, College of Natural Resources  
Utah State University, Logan, UT

**B.S.** Environmental Studies; Minor: Anthropology (cum laude, May 1, 2004)  
Utah State University, Logan, UT

## PROFESSIONAL POSITIONS

**Professional Staff Member, Utah State University** (2011– present)

**Affiliated Instructor**, Dept. of Plant, Soils, and Climate (2016 to present)

- *PSC 6230 Readings in Landscape Water Conservation*. Introduction to the interdisciplinary literature on landscape water conservation. Explores topics in social science, conservation psychology, irrigation technology, landscape horticulture, water demand management, and economics.

**Projects Manager/Research Associate**, WaterMAPS™ Initiative Center for Water Efficient Landscaping (2017 to present)

**Research Associate**, Urban Water Conservation Research Lab (06/2011 to 2016)

- Team member on interdisciplinary research projects studying current water use practices and water conservation behavior
- Assist in preparation of research protocols and Institutional Review Board applications
- Crew Leader managing field research teams
- Maintain data and ensure confidentiality of participant information
- Contribute content and manage WaterMAPS™ website: [watermaps.usu.edu](http://watermaps.usu.edu)

### Projects:

Institutional Partners - *Landscape Water Use Analytics for Institutional and Corporate Properties*, Fall 2016 - 2018

The WaterMAPS™ Team is extending the application of WaterMAPS™ to large property owners in the non-profit, government, and commercial water use sectors. The project is engaging a collaborator to develop a WaterMAPS™ web application for direct use by institutional or corporate entities that own and/or manage multiple properties in dispersed locations.

Eagle Mountain City - *Implementing Water Conservation Strategies in Eagle Mountain City*, Fall 2016 - 2018

Through the Center for Water Efficient Landscaping (CWEL), the project is assisting the city to implement water conservation through customized application of several Extension programs and public outreach efforts including WaterMAPS™ analyses, delivery of Water Checks, Landscape Planning and Design for public spaces, and information provision to citizens.

USGS/Utah Water Research Lab - *WaterMAPS™ for Promoting Urban Landscape Water Use Efficiency*, Spring 2016 - 2017

This project examined patterns of water use and change to promote conservation on managed urban landscapes. Analysis, monitoring and information provision was refined and extended through applied research conducted with Utah cities.

Salt Lake City Department of Public Utilities - *Testing Experimental Irrigation System Interventions*, Summer 2014 - 2017

Urban water conservation research and program delivery show irrigation systems that are poorly designed, maintained, and operated contribute to urban water waste. This project will experimentally test maintenance and operation interventions on irrigation system efficiency.

- Contributed to the development of field procedures in preparation for the 2015 irrigation season
- Assisted in the development of Homeowner Conservation Information packet

Alliance for Water Efficiency (AWE) - *Outdoor Water Savings Research Initiative, Phase I: Analysis of Published Research*, 03/2014 - 09/2014

The goal of this research program is to provide relevant, statistically validated, and peer reviewed information on water savings and costs from different outdoor conservation measures and programs, regional differences, and evaluation methods. The purpose of the project was to inform the direction of the AWE Outdoor Water Savings Research Initiative to address critical knowledge gaps.

- Contributed to a review, analysis, and synthesis of published research on outdoor water use and savings.
- Coauthored project report and journal article

Metropolitan Water District of Salt Lake and Sandy - *Water Check Program Pilot Research*, 2013

This project investigated the issues water check participants encountered maintaining their landscapes and the design, installation, and maintenance of their irrigation system. Participants also indicated their willingness to allow changes to their irrigation system.

- Completed Water Check Training program and assisted with landscape irrigation evaluations and verbal delivery of Homeowner Report as needed
- Administered face-to-face survey interviews (86) with water check participants concurrent with the water check
- Conducted data analysis of survey results

Weber Basin Water Conservancy District - *Water User Dimensions of Meter Implementation on Secondary Pressurized Irrigation Systems*, Spring 2011 - Spring 2013

The study investigated the human aspects of meter implementation and the role that information based on meter data can play in promoting water user accountability and efficiency.

- Conducted literature review on the role of technology and information in promoting conservation
- Administered telephone surveys (13) and face-to-face interviews (7)
- Organized focus group with newly metered secondary water users
- Contributed to the design and content of the Secondary Water Use Report and supporting explanatory Information Sheet
- Served as project contact fielding calls and answering water user's questions regarding reported water use
- Contributed to the development and administration of a post-intervention Water User Survey (mail and internet) to 1049 water users (20% response rate).
- Conducted data analysis of survey results and coauthored project report

Western Water Assessment (NOAA) - *Decision Support Software for Promoting Urban Landscape Water Use Efficiency*, 09/2011 - 07/2012

Water Management Analysis and Planning Software (WaterMAPS™) is a novel water demand management tool for promoting urban landscape water conservation.  
*Website:* [watermaps.usu.edu](http://watermaps.usu.edu)

- Contributed to software's analytic approach based on results and lessons learned during thesis research
- Assist in scheduling and preparation for software demonstrations presented to water managers and urban planners

Western Water Assessment (NOAA) - *Intervening to Encourage Water Conservation*, 09/2011 - 03/2012

- Assisted in preparation of research protocol and Institutional Review Board application amendment
- Conducted a follow-up survey of participants recruited in 2009
- Completed further data analysis of original study's data (below)
- Assisted in preparation of participants' updated Site Assessments

**Graduate Research Assistant**, (2004 to 2011)

SPARC Grant: *Intervening to Encourage Water Conservation*, 08/2009 - 08/2010

This project investigated human motivation, knowledge, decision-making and behavior related to urban water use and conservation. Focus groups were held with residential homeowners, business owners and property managers. The project also conducted a Household Recruitment Pilot Test to learn how to efficiently and effectively recruit participants for a 5-year longitudinal study.

- Team member on an interdisciplinary research project studying current water use practices and water conservation behavior

- Organized 5 focus groups with different types of water users
- Assisted in preparation of research protocols and Institutional Review Board application
- Crew Leader managing field research team conducting 35 surveys and interviews
- Maintained data and ensure confidentiality of participant information

Thesis Research: *Residential Landscape Water Check Programs: Exploring a Conservation Tool*, 05/01/2004 - 05/07/2011

- Team member on an interdisciplinary research project studying current outdoor water use practices and water conservation behavior
- Conducted approximately 500 face-to-face interviews during 2004 and 2005 field seasons
- Performed statistical data analysis
- Presented research results at professional meetings
- Defended M.S. thesis Nov. 4, 2010 and preparing manuscripts for peer reviewed journals

## TRAINING AND CERTIFICATIONS

Landscape for Life Trainer, Lady Bird Johnson Wildflower Center and U.S. Botanic Garden (Nov. 18, 2014)

Getting Started as a Successful Proposal Writer, Grant Writers' Seminars and Workshops, LLC (Sept. 24, 2014)

USU Master Gardener in Weber County, USU Extension Master Gardener Program (Nov. 4, 2013)

Write Winning Grant Proposals, Grant Writers' Seminars and Workshops, LLC (Oct. 9, 2012)

## PUBLICATIONS

Glenn, Diana T., Joanna Endter-Wada, Roger K. Kjølgren, and Christopher M.U. Neale. 2015. Tools for Evaluating and Monitoring the Effectiveness of Urban Landscape Water Conservation Interventions and Programs. *Landscape and Urban Planning*, 139:82-93.

Mayer, Peter, Paul Lander, and Diana Glenn. 2015. Outdoor Water Efficiency Offers Large Potential Savings, But Research on Effectiveness Remains Scarce. *Journal of the American Water Works Association*, 107(2):61-66.

Glenn, Diana T., Joanna Endter-Wada, Roger K. Kjølgren, and Christopher M.U. Neale. 2015. *Water Use Efficiency as Contextualized Systems Thinking*. Manuscript in preparation.

Endter-Wada, Joanna, Roger K. Kjølgren, and Christopher M.U. Neale, Diana Glenn, Adrian Welsh. 2015. *Metrics for Analyzing Appropriateness and Change in Urban Landscape Water Use*. Manuscript in preparation.

Glenn, D.T., 2010. *Residential Landscape Water Check Programs: Exploring A Conservation Tool*. (Master's thesis, Utah State University, 2010). In *Dissertations & Theses @ Utah State University* [database on-line]; available from

- <http://www.proquest.com> (publication number AAT 1487845; accessed February 17, 2011).
- Rosenberg, David E., Joanna Endter-Wada, Arthur Caplan, Diana Glenn, Guy Ballard, Katie Henderson 2011. *Building an Interdisciplinary Research Program in Water Conservation: Approach, preliminary findings, and next steps*. Efficient 2011: Dead Sea, Jordan, March 29 - April 2, 2011.
- Carrus Land Systems. 2007. *Water Stewardship on Rangelands: A Manager's Handbook*. Logan, UT: Carrus Land Systems.
- Kopp, Kelly L., Roger Kjelgren, Joanna Endter-Wada, Jennie M. Hoover, Diana Glenn, and Earl Jackson. 2006. *Landscape Water Conservation for Utah Homeowners*. Association of Natural Resource Extension Professionals Annual Conference. May 14-17. Park City, UT.

## RESEARCH AND PROJECT REPORTS

- Mayer, Peter, Paul Lander, and Diana Glenn. *AWE Outdoor Water Savings Research Initiative*. Research Report for the Alliance for Water Efficiency. Oct. 2014. 89 pp.
- Endter-Wada, Joanna, Diana T. Glenn, Clay Lewis, Roger Kjelgren, and Christopher M.U. Neale. *Water User Dimensions of Meter Implementation on Secondary Pressurized Irrigation Systems*. Research Report for Weber Basin Water Conservancy District and the U.S. Bureau of Reclamation. April 2013. 75 pp.
- Hoover, Jenny, Diana T. Glenn, Joanna Endter-Wada, and Roger Kjelgren. *Water Check Report and Summary: Summer 2005*. Project report prepared for Logan City, Sept. 2006. 48 pp.

## PROFESSIONAL PRESENTATIONS/POSTERS

- Endter-Wada, J., D. Wuenschell, K. Kopp, and S. Duer. 2016. *Enhancing Homeowner Skills for Improving Landscape Irrigation Efficiency*. Presented at WaterSmart Innovations Conference, Las Vegas, NV, USA, Oct. 5-7.
- Glenn, Diana T., Joanna Endter-Wada, Roger Kjelgren. 2015. *Tools for Evaluating and Monitoring the Effectiveness of Urban Landscape Water Conservation Interventions and Programs*, Intermountain Section - American Water Works Association (IMS-AWWA) Annual Conference: The Wet Theory of Relativity–Life = H<sub>2</sub>O, Logan, UT USA, September 16-18.
- Endter-Wada, Joanna, Diana T. Glenn, Roger Kjelgren, Clay Lewis, Christopher Neale. 2015. *Meter Implementation and Information Feedback: Tools for Promoting Urban Water Conservation*. American Water Resources Association (AWRA) Spring Specialty Conference: Water for Urban Areas– Managing Risks and Building Resiliency, Los Angeles, CA USA, March 30-April 1.
- Endter-Wada, Joanna, Diana T. Glenn, Clay Lewis, Christopher Neale, Roger Kjelgren. 2013. *Promoting Urban Water Use Accountability and Conservation through Providing Site-Specific Information Feedback on Appropriateness and Change in Landscape Irrigation*. 19th International Symposium for Society and Resource Management, Estes Park, Colorado, USA, June 4-8.
- Endter-Wada, J., Roger K. Kjelgren, Christopher Neale, Diana T. Glenn, and Clay Lewis. 2012. *Metrics for Analyzing Appropriateness and Change in Urban Landscape Water Use*. American Water Resources Association (AWRA) Annual Water Resources

- Conference, Jacksonville, Florida, USA, November 12-15.
- Endter-Wada, J., Roger K. Kjelgren, Christopher Neale, Diana T. Glenn, Clay Lewis. 2012. *Metrics for Analyzing Appropriateness and Change in Urban Landscape Water Use*. 18th International Symposium for Society & Resource Management, University of Alberta, Edmonton, Canada, June 17-21.
- Endter-Wada, Joanna, Diana T. Glenn, Roger Kjelgren, Christopher Neale. 2008. *Demand Management for Growth in Drought-Prone Regions: Outcomes from Logan Landscape Water Check Interventions*. Spring Run-off Conference; Utah State University, Logan, Utah. March 31-April 1.
- Endter-Wada, Joanna, Diana T. Glenn, Roger Kjelgren, Christopher .M.U. Neale. 2007. *Residential Landscape Water Checks: Building Water Conservation Skills*. Spring Run-off Conference; Utah State University, Logan, Utah. April 5-6.
- Glenn, Diana T., Joanna Endter-Wada, Roger Kjelgren, and Christopher Neale. 2006. *Residential Landscape Water Checks: Interventions to Promote Water Conservation*. The 12<sup>th</sup> International Symposium on Society and Resource Management; Vancouver, BC, Canada. June 3-8.
- Glenn, Diana T. 2005. *The Establishment of Student Chapters of the International Association for Society and Natural Resources*. The 11<sup>th</sup> International Symposium on Society and Resource Management; Östersund, Sweden, June 16-19. (Awarded Best Student Poster Presentation)

## **CURRENT PROFESSIONAL AFFILIATIONS**

American Horticulture Society (AHS)  
American Water Resources Association (AWRA)  
American Water Works Association (AWWA)  
Ecological Society of America (ESA)  
Utah Native Plant Society (UNPS)

## **LEADERSHIP/SERVICE HISTORY**

USU Master Gardener in Weber County 2013 - present  
Student Member, USU Environmental Campus Task Force 2003  
Founding Officer, USU Student Organization for Society & Natural Resources  
2003-2004  
Chair Speaker Coordination, USU Sustainable Landscapes Conference 2004  
Co-chair Planning Committee, USU Sustainable Landscapes Conference 2005  
Volunteer Wetland Monitor 2003-2004