THOMAS P. BALLESTERO Hydrology and Water Resources Engineering

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EDUCATION

Pennsylvania State University: B.S. in Civil Engineering, 1975 (Civil and Environmental Engineering) Pennsylvania State University: M.S. in Civil Engineering, 1977 (Hydrology and Hydraulics) Colorado State University: Ph.D. in Civil Engineering, 1981 (Hydrology & Water Resources)

REGISTRATION

Professional Engineering License in New Hampshire, Colorado, Wyoming, and Pennsylvania
Registered Professional Hydrologist (AIH)
Certified Ground Water Professional (NGWA)
Licensed Professional Geologist, New Hampshire

TECHNICAL SOCIETIES

American Geophysical Union, Member American Institute of Hydrology, Member and Secretary of State Chapter American Society of Civil Engineers, Member American Water Resources Association, Member American Water Works Association, Member National Ground Water Association, Member

EXPERIENCE SUMMARY

2001-present	Director, Stormwater Center, UNH
1989-present	Associate Professor of Civil Engineering, UNH
1993-1999	Chairman, Department of Civil Engineering, UNH
1986-1999	Director, New Hampshire Water Resources Research Center, UNH
1983-1988	Assistant Professor of Civil Engineering, UNH
1982-1983	Division Manager, Water Resources, Simons, Li and Associates, Inc.
1980-1981	Senior Hydrologist, Simons, Li and Associates, Inc.

PUBLICATIONS

Over 80 technical reports and papers on the topics of water resources planning, flood frequency analysis, hydrogeology, hydrology, contaminant fate and transport, solid waste

management, stormwater management, stream restoration, and reservoir operating procedures.

HONORS AND AWARDS

- 2016 ASCE/EWRI Water Visionary Award
- 2015 New England Chapter American Public Works Association Meritorious Service Award
- 2015 Named by Presidential Board to US Stormwater Collaborative
- 2011 US EPA Scientific Advisory Board for Hydraulic Fracturing Review Panel
- 2010 FEMA Scientific Resolution Panel on Flood Hazards
- 1998 $\tau\beta\pi$ Outstanding Teacher Award
- 1995-1997 Mr. and Mrs. Robert C. Davison Environmental Engineering Professorship
- 1992 University of New Hampshire Public Service Award
- 1992 Fulbright Scholar Award
- 1991 University of New Hampshire Outstanding Teaching Award
- 1991 Fulbright Scholar Award
- 1988 $\tau\beta\pi$ Outstanding Teacher Award
- 1986 American Express Partners of the Americas Outstanding Service Award

EXPERIENCE NARRATIVE

At the University of New Hampshire, Dr. Ballestero teaches Fluid Mechanics, Advanced Groundwater Topics, Hydrologic Monitoring, River Mechanics, Open Channel Flow, Engineering Hydrology, Coastal Engineering, Coastal Outfall Design, Stream Restoration, Advanced Stream Restoration Topics, Stormwater Management, and Design of Water Transmission Systems. His research interests are broadly in the field of applied water resources systems modeling and design as well as field monitoring of hydrologic characteristics. Current research projects upon which he is working include: stream restoration; stormwater management; urbanization effects on runoff and water quality; stream crossing designs for aquatic organism passage, sediment transport and bridge scour; and instream flow. Past research endeavors included: movement, monitoring and biodegradation characteristics of organic contaminants in soils and ground water; innovative drilling and field techniques for characterization of contaminated sites and investigating environmentally sensitive locations; bedrock hydrogeology; hydraulic fracturing of bedrock formations; landfill leachate recirculation; artificial ground water recharge; land application of biosolids; simulation of historic salt water reductions to New Hampshire salt water marshes; evaluation of new drilling and ground water monitoring techniques; groundwater flow into coastal and estuarine systems; constructed wetlands from contaminated sediments; and composting of yard and agricultural solid wastes. Dr. Ballestero has taught courses in Concord, NH for personnel employed by the NH Department of Environmental Services that included: landfill design, introduction to ground water hydraulics and hydrology, and surface water hydrology. Dr. Ballestero has also lectured for the NH Technology Transfer Center on Stormwater Drainage and Design of Drainage Structures. He is active in international courses and education. He taught stormwater and groundwater short courses in both Brazil, Panama, and Colombia, and taught graduate and undergraduate semester-long courses in Brazil and Puerto Rico. In 2004 and 2005, at the request of the National Ground Water Association, Dr. Ballestero was invited to give three lectures on characterization and remediation of contaminated ground water in fractured rock. These lectures

were given in New Orleans, Portland, and Houston. In 2006, again at the request of NGWA, this course was converted to an annual 2-day short course on site characterization in support of fractured rock remediation. The course was offered again in Denver in 2011. Dr. Ballestero is fluent in Portuguese and Spanish.

International Efforts: Dr. Ballestero has been nationally and internationally involved in water resources projects including: groundwater development in northeast Brazil and Colombia, as well as the large Guaraní aquifer spanning Brazil, Uruguay, Paraguay, and Argentina; riverbank stabilization in Argentina; the effects of port construction in northeast Brazil; testimony before the U.S. Congress regarding ground water contamination; measurement and development of landfill gas emissions in Bermuda; monitoring of groundwater contamination in Colombia and South Korea; assessment of environmental hazards in northern Russia; contaminated bedrock remediation in Mexico; remediation of contaminated soil in Antarctica, estuarine monitoring in Puerto Rico; and an advisory/review capacity on the Boston Harbor clean-up program. In both 1991 and 1992 Dr. Ballestero was a Fulbright Scholar in Brazil where he taught ground water and surface water theory and modeling at two universities. He research focus there was ground water resources development, desertification, and water quality conditions of rivers. The Fulbright Awards also supported Dr. Ballestero's lectures at various universities and technical meetings throughout Brazil. In addition to his Fulbright experience, Dr. Ballestero has lectured on other occasions (1986, 1989, 1998, 2001, and 2006) at the Federal and State Universities in Fortaleza, Ceará, Brazil on topics of ground water hydrology, computer simulation of hydrology and hydraulics, bedrock hydrogeology, stream restoration, and stochastic hydrology. At the Ceará State University he taught courses on environmental and water resources. He has also worked with the State of Ceará's technology agency (NUTEC) in hydrogeologic evaluation and development of ground water resources.

Dr. Ballestero spent a sabbatical in Puerto Rico in 2000, at the request of the Puerto Rico Water Resources Research Center. At the University of Puerto Rico at Mayagüez, he taught two graduate courses: groundwater hydrology and water resources systems engineering. In addition during this sabbatical he developed a monitoring plan for the Jobos Bay National Estuarine Research Reserve.

Groundwater: Dr. Ballestero has been involved with groundwater projects since 1980 (investigations, water supply, drainage, monitoring). He was one of the lead investigators of the Bedrock Bioremediation Center at UNH. In 1996, 1998, 2002, and 2003, Dr. Ballestero cotaught courses in Bogotá, Colombia on: design of ground water monitoring networks, ground water hydraulics, and ground water monitoring and sampling. The 2003 assignment was at the request of the Colombian geological agency, INGEOMINAS, to assist in the development and protection of bedrock groundwater resources in northern Colombia. In 1998, 2002, and 2003 he was an expert for the United Nations' International Atomic Energy Agency and was delegated to oversee ground water resources development: on the island of San Andrés, Colombia; in the savanna north of Bogotá, Colombia; and for the Guaraní aquifer spanning Brazil, Uruguay, Paraguay, and Argentina. The 2002 assignment also included teaching in a two-week short course that incorporated one week of drilling, geophysics, sampling, and monitoring field demonstrations. Dr. Ballestero has a long consulting, academic, and research expertise in groundwater systems, and in 2010 the US Environmental Protection Agency (EPA) named him to its Science Advisory Board for the Hydraulic Fracturing Review. This panel provided independent peer review and advice to EPA regarding its study of the hydraulic fracturing method for the development of hard rock formations to provide gas for energy. At the present,

he is the professional and technical lead for the University of New Hampshire chapter of Engineers Without Borders in developing water supply wells in northern Uganda.

Stream restoration: Dr. Ballestero's original training and employment was in the area of surface water hydraulics and hydrology. His first private sector employment in the 1970's was with a firm that focused on river engineering: what is now called "stream restoration". Through the years he has continued to consult in this area. On a sabbatical year spanning 2005-2006, Dr. Ballestero performed stream and wetlands restoration projects with the US Fish & Wildlife Service Pennsylvania Field Office in State College, PA. His duties included: engineering designs, collection of stream geomorphic data, and construction supervision. Representative projects included: dam removal, fish bypass channel designs for small dams; wetland design and construction; channel construction; sediment transport monitoring and modeling; and river hydraulic simulation. One project description may be found at https://www.wildlifeforeveryone.org/projects/coalTownship.php. Dr. Ballestero also reviewed and commented on restoration projects that were submitted for regulatory permits. This USFWS work effort continued when the USFWS extended his Intergovernmental Personnel Agreement for 5 years. He spent June through December, 2007, June – August, 2008, and June – August 2009 with the USFWS. Also during this time, Dr. Ballestero taught in three seminars/short courses with the Pennsylvania State University Cooperative Extension on stormwater management and stream restoration. Most recently, he recently completed a US Army Corps of Engineers project in the restoration of Southampton Creek: an impaired urban stream near Philadelphia, PA. His current research lines in stream restoration include: statistical and geomorphic characteristics of large wood in streams; monitoring the movement of large particle (> 400 mm) sediment transport using passively induced transmitters; urbanization consequences to streams; effects of stream crossings on aquatic organism passage (AOP), and fish frequencies related to wood. Dr. Ballestero was involved with modeling river hydraulics and floodplain studies since the mid-1970's. In 2010, the Federal Emergency Management Agency (FEMA) named Dr. Ballestero to its Scientific Resolution Panel (SRP). This panel is codified in the National Flood Insurance Act to perform independent reviews of the scientific and technical data used by FEMA to develop flood elevations for the National Flood Insurance Program's Flood Insurance Rate Maps. The objective of the SRP Process is to assist FEMA and communities in efficiently and impartially reviewing and resolving conflicting data presented to FEMA. Dr. Ballestero was the lead technical author for the State of New Hampshire Stream Crossing Guidelines. He has also developed a screening tool to assess the hydraulic, AOP, and geomorphic compatibility of culverts which the State of New Hampshire is now using to assess all culverts in the state. The stream restoration efforts have led to a very new related research line of living shorelines. At the moment, Dr. Ballestero is designing the first coastal living shorelines in New Hampshire.

Stormwater: Based upon his research during the 1990's of stormwater management systems, Dr. Ballestero was funded by NOAA to create the UNH Stormwater Center – UNHSC (<u>http://www.unh.edu/unhsc/</u>). The UNHSC has a nearly \$1 million annual operating budget and studies the design, performance, maintenance, sustainability, and life cycle of all forms of stormwater management technologies. Dr. Ballestero has three staff working for the UNHSC, and numerous graduate and undergraduate students. At the present, he serves as the lead scientist and Director for the UNHSC. The UNHSC has developed some of the fundamental performance data for green infrastructure technologies as well as design specifications for some

of these technologies. EPA region 1 recently used UNHSC field data to develop guidance for retrofitting green infrastructure into urban environments.

Professional Engagement: Dr. Ballestero peer reviews articles submitted to the following journals: Journal of the American Water Resources Association, Journal of Energy Engineering (ASCE), Rivers, Groundwater (NGWA), Water Resources Research (AGU), Ground Water Monitoring and Remediation (NGWA), Journal of Environmental Engineering (ASCE), Journal of Irrigation and Drainage (ASCE), and Journal of Hydraulic Engineering (ASCE). He has also provided peer review of proposals and served on expert review panels for NSF, EPA, and USDA. He served for ten years on the Editorial Review Board for Ground Water Monitoring and Remediation, and six years as an Associate Editor for the Journal of the American Water Resources Association. Consulting work with which he is typically involved includes: hydraulic effects of flood plain encroachments; ground water resources delineation and development; ground water contamination; effects of mining on ground water; septic system failure mechanisms; design of sediment ponds and erosion control measures; design and analysis of stormwater management systems; valuation of ground water resources; dissolved oxygen modeling in rivers; design of coastal outfalls and harbor works; recirculation of landfill leachate; measurement of vapor fluxes from landfills; closure designs for solid waste dumps; hydrodynamic evaluation of coastal structures; and expert witness testimony.

Supervisory roles: Aside from these academic and research pursuits at UNH, from 1986 to 1999, Dr. Ballestero was the Director of the New Hampshire Water Resources Research Center. This position entailed: overseeing the annual research program, technology transfer, and water related publications. Annually the Center supports three to six research projects. The Center Director develops short and long term research objectives from the interactions and polling of water resources professionals throughout the State. The Director is also responsible for helping to develop federal water resources legislation by the U.S. Congress. Dr. Ballestero was formerly the Secretary of the National Institutes for Water Resources (NIWR) and the regional representative for the NIWR executive board.

Another administrative position held by Dr. Ballestero at UNH was as Chair of the Civil Engineering Department (1993 – 1999). At the time, the Department had 12 FTE faculty, 2 research faculty, and 3 full-time staff members. Also, the Department had 200 undergraduate and 50 graduate students. Department annual research expenditures exceeded \$2 million. The Department housed the following research institutes: Technology Transfer Center, Environmental Research Group, and the New Hampshire Water Resources Research Center.

Prior to his employment at UNH, Dr. Ballestero was employed by Simons, Li, and Associates, Inc. His position there was Senior Hydrologist and Division Manager of the Water Resources Engineering Division. In this capacity, Dr. Ballestero was project manager for projects dealing with water resources development (ground water and surface water supplies), hydropower feasibility analyses, hydrologic analysis and simulation, evaluation of contaminant migration, water rights, and design and evaluation of water monitoring networks. Also, Dr. Ballestero was involved with proposals, corporate marketing, expert witness testimony and corporate management. Dr. Ballestero started and temporarily ran the company branch office in Cheyenne, WY.

PUBLICATIONS (* - refereed)

Gloekler, M.D., T.P. Ballestero, E.V. Dave, I.P. Gaudreau, C.B.R. Watkins, and N.E. Kinner, 2017, Movement and Erosion of Alberta Bitumen Along the Bottom as a Function of Temperature, Water Velocity, and Salinity. International Oil Spill Conference Proceedings: May 2017, Vol. 2017, No. 1, pp. 2306-2326.

- * Ballestero, Thomas P., James H. Houle 1 and Timothy A. Puls, *invited and submitted* July 2017, Subsurface Gravel Wetland and Stormwater Management, Water Online.
- * Kirshen, P., Christy Miller Hesed, Ruth, Matthias. Michael J. Paolisso, Ballestero, Tom. Ellen Douglas, Chris Watson, Philip Giffee, Kim Vermeer, Chris Marchi, Bosma, K, 2017, Engaging Vulnerable Populations in Multi-Level Stakeholder Collaborative Urban Adaptation Planning, Journal of Planning Education and Research. *Submitted March 2017*.
- * Houle, James J., Thomas P. Ballestero and Timothy A. Puls. 2017. The Performance Analysis of Two Relatively Small Capacity Urban Retrofit Stormwater Controls. Journal of Water Management Modeling 25:C417. <u>https://doi.org/10.14796/JWMM</u> .C417 © CHI 2017. <u>www.chijournal.org</u> ISSN 2292-6062.
- * Houle, James J., Thomas P. Ballestero, Robert M. Roseen, Timothy A. Puls, 2015Microbial Pathogen Removal Guidance 1 for Stormwater Management, *submitted to ASCE Journal of Sustainable Water in the Built Environment, in review*
- * Barbu, Iulia and T. P. Ballestero, 2015, A physical model for stormwater flow simulation through a porous pavement system: relating the design parameters to the outflow hydrographs, *in preparation*.
- * Barbu, Iulia and T. P. Ballestero, 2015, The investigation of the nature of flow in a permeable pavement system, *submitted to ASCE Journal of Environmental Engineering, in revision.*
- * Paul Kirshen, Thomas Ballestero, Ellen Douglas, Kirk Bosma, Christine D. Miller Hesed, Michael Paolisso, Chris Watson, Matthias Ruth, Chris Marchi, Kim Vermeer, 2015, Addressing Vulnerable Populations, Collaborative Planning, and Deep Uncertainty in Climate Change Adaptation Planning; the Case Study of East Boston, *submitted to Climatic Change*

Closure to "Unsaturated Flow Functions for Filter Media Used in Low-Impact Development -Stormwater Management Systems" by Iulia A. Barbu and Thomas P. Ballestero, June 2014, DOI:10.1061/(ASCE)IR.1943-4774.0000766, 04014041

Barbu, Iulia, Thomas Ballestero, Beuttell, Kevin, Iulia Barbu, Tom Ballestero and Heather Ballestero, 2014, Bioretention Soils: Which Types Work Best?, in proceedings of the 2014 StormCon Conference, Portland, OR. Forrester Publications.

Watkins, Charles, Olivia Jobin, Nancy Kinner, Thomas Ballestero, Neil W Thomas, Robert Nothnagle, 2014, Critical Shear Stresses of Sunken Oils. International Oil Spill Conference Proceedings: May 2014, Vol. 2014, No. 1, pp. 300241.

 * Barbu, Iulia and T. P. Ballestero, 2014, Unsaturated Flow Functions for Filter Media used in Low Impact Development - Stormwater Management Systems, J. Irrig. Drain Eng., 10.1061/(ASCE)IR.1943-4774.0000766

Ballestero, T. P. and I. A. Barbu, 2014, Time to re-think modeling strategies, Invited Editorial, World Water Stormwater Management, v. 2, issue 1, spring 2014, WEF, London. P. 27.

Avellaneda, Pedro, Eduardo León, Leonardo D. Donado, Erasmo Rodríguez, Thomas Ballestero, 2014, Evaluation of an unsaturated flow model for flow attenuation in green roofs, World Environmental & Water Resources Congress 2014, Portland, OR.

- * Houle, J., Roseen, R., Ballestero, T., Puls, T., and Sherrard, J., Jr. (2013). "Comparison of Maintenance Cost, Labor Demands, and System Performance for LID and Conventional Stormwater Management." J. Environ. Eng., 139(7), 932–938.
- * Roseen, Robert M., Thomas P. Ballestero, Kristopher M. Houle, Douglas Heath, James J. Houle, 2013, Assessment of Winter Maintenance of Porous Asphalt and Its Function for Chloride Source Control, ASCE J. Transp. Eng., 140(2), 04013007.

Ballestero, Thomas P., 2013, Trees Incorporated into Urban Stormwater Management, in Urban Forestry: Toward an Ecosystem Services: A Workshop Summary, Katie Thomas and Laurie Geller, Rapporteurs, Research Board on Atmospheric Sciences and Climate; Division on Earth and Life Studies; National Research Council, The National Academies Press, ISBN 978-0-309-28758-6

Medina, Daniel, Christine Pomeroy, John Aldrich, Robert Pitt, Shirley Clark, Steve Apfelbaum, William Frost, Gary Minton, Virginia Roach, Thomas Ballestero, Michael Barrett, Aditya Tyagi, Louis Regenmorter, Corey Jones, Srinivasan Rangarajan, 2013, The State of the Practice in Stormwater Design: A Guide to the 2012 WEF/ASCE Manual of Practice for Design of Urban Stormwater Controls, Proceedings of the Water Environment Federation, Stormwater 2012, pp. 1-5(5).

Houle, James J., Robert M. Roseen M.ASCE, Thomas P. Ballestero M.ASCE, Timothy A. Puls, James Sherrard, 2012, A Comparison of Maintenance Cost, Labor Demands, and System Performance for LID and Conventional Stormwater Management, in Proceedings 2011 Philadelphia Low Impact Development Symposium, September 25-28, 2011, Philadelphia, PA.

Ballestero, Thomas P., Robert M. Roseen, Federico Uribe, Matt Hergott, James Houle, Tim Puls, 2012, The Porous Pavement Curve Number, in Proceedings 2011 Philadelphia Low Impact Development Symposium, September 25-28, 2011, Philadelphia, PA.

Roseen, Robert M., Todd V. Janeski, Michael Simpson, James J. Houle , Jeff

Gunderson, Thomas P. Ballestero, 2012, Economic and Adaptation Benefits of Low Impact Development, in Proceedings 2011 Philadelphia Low Impact Development Symposium, September 25-28, 2011, Philadelphia, PA.

* Parasiewicz, P., Ryan, K., Vezza, P., Comoglio, C., Ballestero, T. and Rogers, J. N. (2012), Use of quantitative habitat models for establishing performance metrics in river restoration planning. Ecohydrol.. doi: 10.1002/eco.1350

Gunderson, Jeff, Robert M. Roseen, Thomas P. Ballestero, Alison Watts, James Houle, and Kim Farah, 2012, Subsurface Gravel Wetlands for Stormwater Management, Stormwater, Vol. 13 No. 8, pp 8-17.

- * Ballestero, Thomas P. and Daniel Medina, 2012, Chapter 8 Filters, in <u>Design of Urban</u> <u>Stormwater Controls</u>, ASCE MOP No. 23, WEF MOP No. 87, McGraw-Hill, NY.
- * Roseen, Robert M., Thomas P. Ballestero, James J. Houle, Joshua F. Briggs, Kristopher M. Houle, 2012, Water Quality and Hydrologic Performance of a Porous Asphalt Pavement as a Stormwater Treatment Strategy in a Cold Climate, ASCE Journal of Environmental Engineering, vol. 138, no. 1, pp. 81-89.
- * Avellaneda, Pedro, Thomas Ballestero, Robert Roseen, James Houle and Ernst Linder, A, 2011, Bayesian stormwater quality model and its application to water quality monitoring, ASCE Journal of Environmental Engineering, Volume 137, Issue 7 (July 2011).
- * Wengrove, Meagan E. and Thomas P. Ballestero, 2011, Upstream to Downstream: Stormwater Quality in Mayagüez, Puerto Rico, *Environmental Monitoring and Assessment*, Springer Publishing, DOI 10.1007/s10661-011-2318-x
- * Ray, Ram L., Jennifer M. Jacobs, and Thomas P. Ballestero, 2011, Regional Landslide Susceptibility Spatiotemporal Variations under Dynamic Soil Moisture Conditions, Natural Hazards (2011) 59:1317–1337.

Roseen, Robert, Nicolas DiGennaro, Alison Watts, Thomas Ballestero, James Houle, and Timothy Puls, 2011, Examination of Thermal Impacts From Stormwater Best Management Practices, Final Project report US EPA Region 1, TMDL Program, UNHSC, Durham, NH.

Avellaneda, Pedro, Thomas Ballestero, Robert Roseen, James Houle, and Ernst Linder, 2011, A Water Quality Model for Stormwater Filtering Systems, World Environmental and Water Resources Congress 2011: Bearing Knowledge for Sustainability, Proceedings of the 2011 World Environmental and Water Resources Congress, ASCE Conf. Proc. pp. 3591-3600, doi:10.1061/41173(414)376.

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Roseen, Robert, Nicolas DiGennaro, Alison Watts, Thomas Ballestero, James Houle, 2010, Preliminary Results of the Examination of Thermal Impacts from Stormwater BMPs, in *Proceedings of World Environmental and Water Resources Congress 2010*: Challenges of Change by Richard N. Palmer, Ph.D., P.E., D.WRE, (editor), Reston, VA,(doi 10.1061/41114(371)352)

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- * Watts, A., T. Ballestero, R. Roseen, and J. Houle, 2010, Polycyclic Aromatic Hydrocarbons in Stormwater Runoff from Sealcoated Pavements, Environmental Science and Technology. 44 (23) 8849–8854.
- * Avellaneda, Pedro, Thomas Ballestero, Robert Roseen, and James Houle, 2010, Modeling Urban Stormwater Runoff Quality Treatment: Model Development and Application to a Surface Sand Filter, ASCE Journal of Environmental Engineering, volume 316, number 1.
- * Sandoval, Julián, Pedro de Alba, Thomas P. Ballestero, Barry K. Fussell, 2010, Residual Strength of Liquefied Sand: Laboratory vs. Field Measurements, Fifth International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, May 24-29, San Diego.
- * Houle, Kristopher M., Robert M. Roseen, Thomas P. Ballestero, Joshua F. Briggs, and James J. Houle, 2009, Examinations of Pervious Concrete and Porous Asphalt Pavements Performance for Stormwater Management in Northern Climates, in *Proceedings of World Environmental and Water Resources Congress 2009*, May 17–21, 2009, Kansas City, Missouri, Steve Starrett Ph.D., P.E., D.WRE, Editor, pp. 1-18, (doi 10.1061/41036(342)111)

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Kansas City, Missouri, Steve Starrett Ph.D., P.E., D.WRE, Editor, pp. 1-18, (doi 10.1061/41036(342)134).

Barbu, I.A., Ballestero, T.P., Roseen, R.M., 2009. "LID-SWM Practices as a Means of Resilience to Climate Change and Its Effects on Groundwater Recharge", Colorado Journal of International Environmental Law and Policy, published speaker for the 2008 UNESCO - International Conference on Water Scarcity, Global Changes and Groundwater Management, *accepted for publication*.

- * Roseen, R. M., Thomas P. Ballestero, James J. Houle, Pedro Avellaneda, Joshua Briggs, George Fowler, and Robert Wildey, (2009). "Seasonal Performance Variations for Stormwater Management Systems in Cold Climate Conditions." Journal of Environmental Engineering, Vol. 135, No. 3, March 2009, pp. 128-137
- * Avellaneda, Pedro, Thomas Ballestero, Robert Roseen, and James Houle, 2009, On Parameter Estimation of An Urban Stormwater Runoff Model, ASCE Journal of Environmental Engineering, v. 135, n. 8, pp: 595-608.

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- de Alba, P. and T. P. Ballestero, 2008, "Effect of Fines on Residual Strength after Liquefaction," Geotechnical Earthquake Engineering and Soil Dynamics IV, ASCE Geotechnical Special Publication 181.
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 "Monitoring and Sampling the Vadose Zone" in <u>Practical Handbook of Environmental Site</u> <u>Characterization and Ground-Water Monitoring, second edition</u>, ed. David M. Nielson, CRC Press, Boca Raton, FL.

Bacca-Cortes, Gabriel F., Thomas P. Ballestero, and Robert M. Roseen, 2005, Land Use Influence on the Characteristics of Groundwater Inputs to the Great Bay Estuary, NH, 2005, in Watershed Management to Meet Water Quality Standards and Emerging TMDL (Total Maximum Daily Load) Proceedings of the Third Conference 5-9 March 2005 (Atlanta, Georgia USA), Published by the American Society of Agricultural and Biological Engineers, St. Joseph, Michigan.

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