

Thomas R. Schueler
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Areas of Expertise

Tom has more than 25 years experience in practical aspects of urban stream research, stormwater design, stream restoration, retrofits, comprehensive watershed planning, management and organizational development. Some of his specific technical and management skills are outlined below:

Watershed Restoration Techniques: Tom has written seven volumes of the *Small Urban Watershed Restoration Manual Series* including *Restoration Methods*, *Stormwater Retrofit Practices*, *Stream Repair Practices*, *Source Control Practices* and the *Unified Stream Assessment*. Together, these manuals define the methods and practices needed to comprehensively and cost-effectively restore streams damaged by past development which have been tested and refined in more than 25 urban watersheds in North America.

Urban Stream and Stormwater Research: Tom has been continuously involved in research to better understand the dynamics of urban streams and their response to stormwater runoff and land development. Tom developed and refined the Impervious Cover Model (ICM) that is a widely recognized watershed planning tool. Tom helped develop the U.S National Stormwater Quality Database that contains pollutant event mean concentrations for more than 3800 storm events. Tom also directed the creation of a National Stormwater BMP Pollutant Removal Database, and conducted extensive cost research on stormwater treatment practices, retrofits and low impact development (LID) technology.

Design of Stormwater Practices: Tom has written or co-written more than a dozen local and state stormwater engineering design manuals, and developed or refined the first design specifications for bioretention, wet ponds, constructed wetlands, filtering systems, and dry swales. The manuals have directly led to greater adoption of more effective stormwater practices and LID technology. Tom also created the Simple Method that is widely used to compute stormwater loads.

Watershed Protection Techniques: Tom has authored several widely-used references, including *The Practice of Watershed Protection*, *Rapid Watershed Planning Handbook*, and *Maryland Watershed Users Guide*. Tom developed new desktop, field and stakeholder methods to move rapidly from assessment and planning to implementation, and tested the methods during more than 30 watershed plans across the country.

Other Watershed Skills: Tom also has expertise in the following areas: better site design, urban wetland management, watershed forestry, erosion and sediment control, illicit discharge detection and elimination, urban forest conservation, stream temperature research, island

watershed management, street sweeping research and stormwater monitoring.

Regional, National and International Watershed Experience: Tom's work at the Center has taken him to 42 states, provinces and territories, with extensive work in the Chesapeake Bay, Pacific Northwest, Midwest, Southeast, Northeast, Caribbean, Hawaii, Canada and New Zealand. This exposure has given him a better understanding of local watershed conditions in diverse geographic settings, and expanded his knowledge of the political, regulatory, economic and cultural forces that drive watershed planning in different regions.

Teaching and Training: Tom has taught undergraduate and graduate courses at the University of Maryland, and have been a guest lecturer at Herriot Watt University (Scotland), University of Virginia, Virginia Polytechnic Institute, Cornell, North Carolina State University, Johns Hopkins University, University of Washington, Oregon State University, Georgetown, Princeton and University of Alabama. Tom has also presented more than 50 keynote addresses to international, national or regional scientific conferences, conducted more than 150 training workshops on a diverse range of topics. has served on two U.S. National Academy of Science expert panels on stormwater and watershed management issues, and edited the journal *Watershed Protection Techniques* for eight years.

Work Experience

Executive Director. Chesapeake Stormwater Network. Baltimore, MD (July 2007 to present) Tom founded the Chesapeake Stormwater Network to advocate for reform of federal, state and local laws, permits, and regulations to promote more sustainable stormwater management in the Chesapeake Bay. The interactive Network seeks to align and integrate the efforts of thousands of individuals working on the stormwater problem across the Bay. The Network focuses on legislation, litigation, compliance, training and education to meet its mission.

Executive Director and Founder. Center for Watershed Protection (1992 to 2003).
Director of Watershed Research and Practice. (2003 to 2007). Tom founded a national nonprofit organization dedicated to protection of streams, lakes and estuaries through improved stewardship of urban and rural watersheds, and was responsible for all aspects of work program development, management, research, technical support and educational training. Since 2003, Tom shifted his role to direct the Center's research and practice programs, working with a network of more than 50 academic institutions, local, state, federal agencies and non-governmental institutions to improve watershed protection and restoration practices.

Chief, Anacostia Restoration Team. Metropolitan Washington Council of Governments (1982-1992). Tom directed a team of eight interdisciplinary staff focused on research and design of urban watershed restoration practices and nonpoint source pollution controls. Tom spearheaded the first major urban watershed restoration effort in the nation, and designed a comprehensive plan to implement over 400 watershed restoration projects in the Anacostia, including stormwater retrofits, stream restoration, fish barrier removal, tidal and non-tidal wetland creation, riparian reforestation, and citizen stewardship projects.

Selected Publications

- Stormwater Retrofit Practices* (2007). Manual 3. Small Urban Watershed Restoration Manual Series. CWP
- The Smart Watershed Benchmarking Tool*. (2006). CWP
- Maryland Watershed Planning Users Guide*. (2006). CWP w/ R. Winer and K. Capiella
- Minnesota Stormwater Manual*. (2005). w/ EOR and Minnesota Stormwater Steering Committee.
- Methods to Develop Restoration Plans for Small Watersheds*. (2005). Manual 2. Small Urban Watershed Restoration Manual Series. CWP
- Urban Stream Repair Practices*. (2005). Manual 4. Small Urban Watershed Restoration Manual Series. CWP
- Pollution Source Control Practices*. (2004). Manual 8. Small Urban Watershed Restoration Manual Series. CWP
- Unified Stream Assessment (USA): A Users Guide*. (2004). Manual 10. Small Urban Watershed Restoration Manual Series. CWP
- Upland Site and Subwatershed Reconnaissance (USSR): A Users Guide*. (2004). Manual 11. Small Urban Watershed Restoration Manual Series. CWP
- An Integrated Framework to Restore Small Urban Watersheds*. (2003). Manual 1. Small Urban Watershed Restoration Manual Series. (CWP)
- The Impacts of Impervious Cover on Aquatic Systems*. (2003). CWP
- Urban Stream Restoration Practices: An Initial Assessment*. (2000). w/ K. Brown. CWP
- The Practice of Watershed Protection: Techniques for Protecting and Restoring Urban Watersheds*. (2000). CWP w/ H. Holland.
- Maryland Stormwater Design Manual*. Volumes 1 and 2. (1999). CWP w/ R. Claytor.
- Better Site Design: A Handbook for Changing Development Rules in Your Community*. (1998). CWP w/other CWP staff
- Rapid Watershed Planning Handbook*. (1998). CWP. w/other CWP staff.
- National Urban BMP Performance Monitoring Database*. (1997). CWP w/ Whitney Brown.
- Cost of Urban BMPs In the Mid-Atlantic Region* (1997). CWP. w/ Whitney Brown.
- Design of Stormwater Filtering Systems*. (1996) w/ Rich Claytor.
- Design of Stormwater Wetland Systems--Guidelines for Creating Diverse and Effective Wetlands in the Mid-Atlantic Region*. (1992). MWCOG.
- Stormwater Management Recommendations for the Auckland, New Zealand Region* (1991). TRS.
- Effectiveness of Sediment Traps and Basins in Suburban Maryland*. (1988). MWCOG. w/ John Lugbill.
- Controlling Urban Runoff--A Practical Manual for Planning and Designing Urban Best Management Practices*. (1987) MWCOG.

