

CHARLES L. DOW

Stroud Water Research Center (SWRC)
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EXPERIENCEDirector of Information Services /Research Scientist

Stroud Water Research Center; July 2002 to present

Manage staff and resources related to Center-wide computing resources and data analysis\management. Conduct data analyses in cooperation with and provide GIS services for SWRC Scientists and outside colleagues/collaborators.

Project Coordinator/ Project Manager /Research Scientist

NY Watersheds Project - Stroud Water Research Center; May 2000 – Dec 2006

Coordinated/participated in field work, data analysis/management, report writing, and producing peer-reviewed publications for a multi-year, multi-discipline project focused on stream health and condition within New York City's drinking water-supply watersheds.

Research Scientist

The Pinelands Commission, New Lisbon, NJ; Sept 1996 - May 2000

Conducted environmental research, including field work, data analysis, results interpretation and presenting those analyses and results in reports and peer-review publications in support of the mission of the Pinelands Commission to protect and preserve the Pinelands National Preserve.

Graduate School: Research Assistant

Pennsylvania State University, University Park, PA
June 1994 – Dec 1995; June 1996 - Aug 1996 (School of Forest Resources)
Jan 1992 - May 1994 (U.S. EPA Long-Term Monitoring Project)
Aug 1990 - Dec 1991 (Environmental Pollution Control Program)

Graduate School: Teaching Assistant

Pennsylvania State University, University Park, PA
Jan 1996 to May 1996 (School of Forest Resources)

Laboratory Technician

E.I. Dupont de Nemours and Co., Agricultural Products Department,
Stine-Haskell Research Center, Newark, DE; Oct 1988 – Aug 1990

EDUCATION

- Ph.D. Forest Resources, Pennsylvania State University - 1997
Major: Forest Hydrology
Minor: Statistics
Dissertation: *Long-term trends in annual watershed evaporation and Bowen Ratio due to urbanization in the eastern United States.*
- M.S. Environmental Pollution Control, Pennsylvania State University - 1992
Thesis: *Sulfur and nitrogen budgets on five forested Appalachian Plateau Basins.*
- B.S. Chemistry, DeSales University - 1988

PUBLICATIONS

- Kan, J., S. Clingenpeel, **C.L. Dow**, T.R. McDermott, R.E. Macur, W.P. Inskeep, and K.H. Nealson. (2016). Geochemistry and mixing drive the spatial distribution of free-living Archaea and Bacteria in Yellowstone Lake. *Frontiers in Microbiology* 7(210):1-13.
- McAllister, S.M., J.M. Barnett, J.W. Heiss, A.J. Findlay, D.J. MacDonald, **C.L. Dow**, G.W. Luther III, H.A. Michael, and C.S.Chan. (2015). Dynamic hydrologic and biogeochemical processes drive microbially enhanced iron and sulfur cycling within the intertidal mixing zone of a beach aquifer. *Limnology and Oceanography* 60:329-345.
- Dow, C. L.** (2007). Assessing regional land-use/cover influences on New Jersey Pinelands streamflow through hydrograph analysis. *Hydrological Processes* 21:185-197.
- Arscott, D. B., **C. L. Dow**, and B. W. Sweeney. (2006). Landscape template of New York City's drinking-water-supply watersheds. *J. of the North American Benthological Society* 25:867-886.
- Dow, C. L.**, D. B. Arscott, and J. D. Newbold. (2006). Relating major ions and nutrients to watershed conditions across a mixed-use, water-supply watershed. *J. of the North American Benthological Society* 25:887-911.
- Kaplan, L. A., J. D. Newbold, D. J. Van Horn, **C. L. Dow**, A. K. Aufdenkampe, and J. K. Jackson. (2006). Organic matter transport in New York City drinking-water-supply watersheds. *J. of the North American Benthological Society* 25:912-927.
- Aufdenkampe, A. K., D. B. Arscott, **C. L. Dow**, and L. J. Standley. (2006). Molecular tracers of soot and sewage contamination in streams supplying New York City drinking water. *J. of the North American Benthological Society* 25:928-953.

Kratzer, E. B., J. K. Jackson, D. B. Arscott, A. K. Aufdenkampe, **C. L. Dow**, L. A. Kaplan, J. D. Newbold, and B. W. Sweeney. (2006). Macroinvertebrate distribution in relation to land use and water chemistry in New York City drinking-water-supply watersheds. *J. of the North American Benthological Society* 25:954-976.

Newbold, J. D., T. L. Bott, L. A. Kaplan, **C. L. Dow**, L. A. Martin, D. J. Van Horn, and A. A. de Long. (2006). Uptake of nutrients and organic C in streams in New York City drinking-water-supply watersheds. *J. of the North American Benthological Society* 25:998-1017.

Bott, T. L., D. S. Montgomery, J. D. Newbold, D. B. Arscott, **C. L. Dow**, A. K. Aufdenkampe, J. K. Jackson, and L. A. Kaplan. (2006). Ecosystem metabolism in streams of the Catskill Mountains (Delaware and Hudson River watersheds) and Lower Hudson Valley. *J. of the North American Benthological Society* 25:1018-1044.

Bott, T. L., D. S. Montgomery, D. B. Arscott, and **C. L. Dow**. (2006). Primary productivity in receiving reservoirs: links to influent streams. *J. of the North American Benthological Society* 25:1045-1061.

Sweeney, B. W., D. B. Arscott, **C. L. Dow**, J. G. Blaine, A. K. Aufdenkampe, T. L. Bott, J. K. Jackson, L. A. Kaplan, and J. D. Newbold. (2006). Enhanced source-water monitoring for New York City: summary and perspective. *J. of the North American Benthological Society* 25:1062-1067.

Zampella, R.A., **C.L. Dow**, and J.B. Bunnell. (2001). Using reference sites and simple linear regression to estimate long-term water levels in Coastal Plain streams. *J. of the American Water Resources Association*. 37(5):1189-1201.

Dow, C.L. and D.R. DeWalle (2000). Trends in evaporation and Bowen Ratio on urbanizing watersheds in eastern United States. *Water Resources Research*. 36(7):1835-1843.

Dow, C.L. and R.A. Zampella (2000). Specific conductance and pH as watershed disturbance indicators in streams of the New Jersey Pinelands, U.S.A. *Environmental Management*. 26(4):437-445.

Dow, C.L. (1999). Detecting baseflow trends in Coastal Plain streams. *J. of the American Water Resources Association*. 35(2):349-362.

Dow, C.L. and D.R. DeWalle (1997). Sulfur and nitrogen budgets for five forested Appalachian Plateau Basins. *Hydrological Processes*. 11:801-816.

Dow, C.L., D.R. DeWalle, J.A. Lynch, and W.E. Sharpe (1994). Blizzard's effects on Appalachian stream chemistry assessed. *EOS* 75(34):389.

GRANTS and CONTRACTS

Expert Report and Witness: Physical, Chemical, & Biological Connections between Ephemeral streams and downstream waters in West Virginia. Contract: U.S. Department of Justice Justice in the matter of Ron Foster et al. v. EPA et al., No. 2:14-cv-16744 (S.D.W.V.). 2015-present. Principal Investigators: D.B. Arscott, **C.L. Dow**

Improving Infrastructure for Data Access, Storage and Recovery, and Network Communication at Stroud Water Research Center. Funded by: National Science Foundation. Grant # 1522479. \$54,745. Principal Investigators: D.B. Arscott, **C.L. Dow**. 2015-2016.

Long-Term Research in Environmental Biology (LTREB): Trajectory for the Recovery of Stream Ecosystem Structure and Function During Reforestation. Funded by: National Science Foundation DEB 1052716. Principal Investigators: B.W. Sweeney, A.K. Aufdenkampe, J.K. Jackson, J. Kan, and M. Daniels. Collaborators: J.D. Newbold, D.B. Arscott, **C.L. Dow**, S.E. Gill, L.A. Kaplan, and W.H. Eldridge. \$900,000. 2010-2020.

Christina River Basin Critical Zone Observatory (CRB-CZO): Quantifying Carbon Sequestration Resulting From Human-Induced Erosion. Funded by: National Science Foundation EAR 0724971 and 1331856. Principal Investigators: A.K. Aufdenkampe and L.A. Kaplan; J. Pizzuto and H. Michael (University of Delaware); K. Yoo (University of Minnesota). Collaborators: J. Kan, M.D. Daniels, D.B. Arscott, **C.L. Dow**, and S.E. Gill (Stroud Water Research Center); R. Aalto (University of Exeter, United Kingdom); L. Slater (Rutgers University); R. Vargas, C. Chan and D.L. Sparks (University of Delaware). 2010-2015.

PRESENTATIONS (post 2000, as presenter)

Dow, C.L., A.K. Aufdenkampe, L.G. Carter, D.B. Arscott. 2007. Molecular tracers (fecal steroids) signatures of end-member sources of potential contamination to NY streams. NYC Watershed Science and Technical Conference, September 10-11, West Point NY.

Dow, C.L., A.K. Aufdenkampe. 2006. Using SAS to improve the quantification of environmental chemistry samples. Talk at the North East SAS User's Group (NESUG) Annual Meeting, September 17-20, Philadelphia, PA.

Dow, C.L., A.K. Aufdenkampe, T.L. Bott, J.K. Jackson, L.A. Kaplan, J.D. Newbold, B.W. Sweeney. 2003. Enhanced monitoring in source watersheds for NYC drinking water: Relating stream/reservoir health and function to watershed conditions. NYC Watershed Science and Technical Conference, September 11-12, Kingston NY.

Dow, C.L., D.B. Arscott, A. K. Aufdenkampe, T.L. Bott, L.G. Carter, J.K. Jackson, L.A. Kaplan, J.D. Newbold, and B.W. Sweeney. 2006. Enhanced monitoring effort in

New York City's drinking-water-supply watershed. Annual Conference of the North American Benthological Society. Anchorage, AK, USA.

Dow, C.L., T.L. Bott, J.J. Jackson, L.A. Kaplan, J.D. Newbold, B.W. Sweeney, and T.T. Truong. 2003. Assessing stream ecosystem health and functioning through a multi-parameter monitoring approach. AWRA 2003 International Congress on Watershed Management for Water Supply Systems. June 29-July 2, New York City, NY

Dow, C.L. 2003. Watershed Controls on Stream Ecosystem Conditions. Penn State School of Forest Resources, Issues Conference. March 25-26, Pennsylvania State University, University Park, PA, USA.

Dow, C.L., J.K. Jackson, L.A. Kaplan, J.D. Newbold, L.J. Standley, and B. W. Sweeney. 2002. Importance of both redundancy and specificity in water-quality monitoring projects: Initial results from baseflow monitoring in watersheds that supply New York City with drinking water. Annual Conference of the North American Benthological Society. Pittsburgh, PA, USA.

PRIMARY SOFTWARE USED

SAS (including Base, STAT, Graph)
ArcGIS (including ArcMAP, Spatial Analyst)

PROFESSIONAL AFFILIATIONS

American Water Resources Association

REVIEWER

Journal of the American Water Resources Association
Environmental Monitoring and Assessment
Journal of Environmental Management
Freshwater Science (formerly Journal of the North American Benthological Society)
Journal of Coastal Research