

BARRY M. EVANS

EDUCATION

Pre-Engineering. Vincennes University, 1970-71.

B.S., Natural Resources. The Ohio State University, 1975.

M.E.P.C., Environmental Pollution Control. The Pennsylvania State University, 1978.

Ph.D., Soil Science. The Pennsylvania State University, 2002.

CAREER SUMMARY

2002-Present Senior Research Associate, Penn State Institutes of the Environment

Dr. Evans is Director of the GIS Support Center, a research unit affiliated with the Penn State Institutes of Energy and the Environment (PSIEE). At PSIEE, he is primarily responsible for obtaining and managing research projects funded by a variety of governmental and institutional sponsors. One of his primary activities recently has been to manage a multi-year, multi-million dollar open-end contract to provide environmental /GIS support services to the Pennsylvania Department of Environmental Protection (PaDEP), as well as other state agencies. Of late, he has been primarily involved in developing specialized software applications to support water resource/water quality assessment needs. To date, Dr. Evans' group has developed numerous software applications (e.g., AVGWLF, AVStreams, PRedICT, AVNPSTool and SWAP-GIS) to support ongoing PaDEP activities in the areas of watershed modeling, TMDL assessment, source water protection, and evaluation of pollution mitigation strategies (e.g., urban and agricultural BMPs, wastewater treatment upgrades, etc.) at the watershed level. In addition to his state-related work, Dr. Evans has worked on projects sponsored by the U.S. Environmental Protection Agency and National Science Foundation, and has provided technical expertise to such diverse groups as the Mexican Institute of Water Technology; the State of Nuevo Leon, Mexico; the Swedish Meteorological and Hydrological Institute; the Environment Agency (of England and Wales), and to local and provincial groups in Ontario, Canada.

1995-2002 Senior Research Assistant, Environmental Resources Research Institute, Penn State University

Primarily responsible for obtaining and managing GIS projects funded by a variety of governmental and institutional sponsors. Managed a multi-year, multi-million dollar contract to provide GIS services to the Pennsylvania Department of Environmental Protection and other state agencies.

1988-1995 President, Geo Decisions, Inc., State College, PA

Responsible for corporate management as well as obtaining and managing GIS and environmental projects undertaken by GDI, a large, nationally-recognized firm specializing in geo-spatial technologies..

1984-1988 Research Assistant, Environmental Resources Research Institute, Penn State University

Managed and conducted a variety of environmental assessment and mapping projects conducted using GIS and remote sensing technology.

1981-1984 Manager of Environmental Mapping Section, Resource Technology Corporation, State College, PA

Managed and supervised contracted work related to environmental mapping, geomorphology, and landscape analysis.

1980-1981 Owner/Manager, Remote Sensing Consultants, State College, PA

Obtained and managed contracted work such as septic system surveys, development of a wetlands analysis manual, and various non-point pollution source inventories.

1978-1980 Consultant, Development Sciences, Inc., Sagamore, MA

Worked on engineering sanitary surveys, various EPA-sponsored projects, and environmental resource inventories.

1976-1978 Project Manager, Trident Engineering, Warrenton, VA

Worked as an on-site contractor at the U.S. EPA's Environmental Photographic Interpretation Center. Projects completed involved use of aerial photography for various environmental analyses and mapping activities such as hazardous waste inventories, septic system analyses, oil spill emergencies, and land use/cover mapping.

PROFESSIONAL MEMBERSHIPS

Soil and Water Conservation Society
American Water Resources Association
International Environmental Modeling and Software Society
International Water Association

RECENT CONSULTANCIES

Greenland International Consulting, Inc.
Skelly & Loy, Inc.
Clear Creeks Consulting, Inc.
Louis Berger International, Inc.
CH2M-Hill, Inc.
Amazon Center for Environmental Education and Research
Swedish Meteorological and Hydrological Institute
Mexican Institute of Water Technology
National Water Commission, State of Israel
Argentine Institute of Oceanography
The Cadmus Group, Inc.
Environment Agency of England and Wales

OTHER

U.S. Representative on Management Committee of the Diffuse Pollution Sub-Group of the International Water Association

PUBLICATIONS AND REPORTS

Markel, D., F. Somma, and B.M. Evans, 2006. Using a GIS Transfer model (AVGWLF) to evaluate pollutant loads in the Lake Kinneret watershed, Israel. *Water Science & Technology*, Vol. 53, No. 10.

Evans, B.M. A Statewide Approach to Identifying, Quantifying and Mitigating Diffuse Pollution-Related Problems, 2006. In: *Managing Rural Diffuse Pollution, Proceedings SAC and SEPA Biennial Conference*, Edinburgh, Scotland, April 2006.

Evans, B.M., 2005. Recent Enhancements to AVGWLF and Related Software Tools to Support Pollutant Load Estimation and Evaluation of Pollution Mitigation Strategies. In: *Proc. of Specialist Conference on Diffuse Pollution*, Johannesburg, South Africa, p. 36.

Watts, S., B. Gharabaghi, R.P. Rudra, M. Palmer, T. Boston, B. Evans, and M. Walters, 2005. Evaluation of the GIS-Based Nutrient Management Model CANWET in Ontario. In: *Proc. 58th Natl. Conf. Canadian Water Resources Assoc.*, June 2005, Banff, Canada.

Evans, B.M. and T. Hristov, 2004. Simulation of Stream Flow in the Yantra River Basin, Bulgaria via a GIS-Based Modeling Approach, 2004. In: Pahl-Wostl, C., Schmidt, S. and Jakeman, T. (eds) *iEMSs 2004 International Congress: "Complexity and Integrated Resources Management"*. International Environmental Modelling and Software Society, Osnabrueck, Germany, June 2004.

Sheeder, S.A. and B.M. Evans, 2004. Development of Nutrient and Sediment Threshold Criteria for Pennsylvania TMDL Assessment. *J. American Water Resources Association*, Vol. 40., No. 4, pp.881-888.

Sheeder, S.A., B.M. Evans, and E. Louis. 2004. Developing Statistical Models to Establish the Relationship Between Urban Nonpoint Source Pollutant Loads and Watershed Characteristics in the Chesapeake Bay Watershed. Prepared for U.S. EPA, Chesapeake Bay Program Office, Project ID: LU-B.

Graczyk, T.K., C.J. Shiff, E. Nizeyimana, B. Evans, and J.A. Patz, 2003. Ecology of zoonotic cryptosporidiosis in watersheds containing cattle farming operations. In: "Cryptosporidium from Molecules to Disease", R.C.A. Thompson, U. Morgan, and A. Armson (eds.). Elsevier Science, Amsterdam, pp. 353-358.

Evans, B.M., S.A. Sheeder, and D.W. Lehning, 2003. A Spatial Technique for Estimating Streambank Erosion Based on Watershed Characteristics. *J. Spatial Hydrology*, Vol. 3, No. 2., (www.spatialhydrology.com).

Evans, B.M., 2003. A Generic Tool for Evaluating the Utility of Selected Pollution Mitigation Strategies within a Watershed. *Proc. 7th International Conf. On Diffuse Pollution and Basin Management*, Dublin, Ireland, Vol. 2 of 4, pp. 10.7 – 10.12.

Evans, B.M., D.W. Lehning, K.J. Corradini, G.W. Petersen, E. Nizeyimana, J.M. Hamlett, P.D. Robillard, and R.L. Day, 2002. A Comprehensive GIS-Based Modeling Approach for Predicting Nutrient Loads in Watersheds. *J. Spatial Hydrology*, Vol. 2, No. 2., (www.spatialhydrology.com).

- Evans, B.M., D.W. Lehning, K.J. Corradini, and M.C. Anderson, 2002. Description of GIS-Based Methodology Used to Conduct Source Water Assessments for Small Community Water Systems in Pennsylvania. Environ. Resources Research Institute, Pennsylvania State University, 23 pp.
- Chang, H., B.M. Evans, and D. Easterling, 2001. The Effects of Climate Change on Stream Flow and Nutrient Loadings. J. Amer. Water Resources Assoc., Vol. 37, No. 4, pp.973-986.
- Hamlett, J.M., B.M. Evans, C.G. Knight, J.J. Carmichael, T.N. Hristov, D. Dimitrov, V.D. Ioncheva, I.I. Nikolov, M.P. Staneva and H. Chang, 2001. Yantra decision support system: Linking GIS with nonpoint source and in-stream models. ASAE Microfiche No. 01-2123. ASAE, St. Joseph, MI.
- Ghebremichael, L.T., J.M. Hamlett, and B.M. Evans, 2001. Incorporating a pesticide component into the AVGWLF model for water quality assessments. ASAE Microfiche No. 01-2129. ASAE, St. Joseph, MI.
- Evans, B.M., S.A. Sheeder, and K.J. Corradini, 2001. AVGWLF, Version 4.03: Users Guide. Environmental Resources Research Institute, Penn State University, 73 pp.
- Dávila, J.I., M.A. Gómez, F.A. Córtez, B.M. Evans, R. Heidl and M.A. Mijangos, 2000. Evaluation of Diffuse Contamination in the Rio Apatlaco Basin Via Application of the ArcView-GWLF Interface. Proc. 29th Latin American Congress on Hydrology, Cordoba, Argentina.
- Graczyk, T.K., B.M. Evans, C.J. Shiff, H.J. Karreman, and J.A. Patz, 2000. Environmental and Geographical Factors Contributing to Watershed Contamination with *Cryptosporidium parvum* Oocysts. Environmental Research, Section A, Vol. 82, pp. 263-271.
- Arnold, J., R. Binger, D. Burrows, P.A. DeBarry, E.T. Engman, B.M. Evans, T.A. Evans, J. Garbrecht, L. Garcia, L.E. Johnson, J.D. Jorgeson, V. Krysanova, G. Leavesley, D.R. Maidment, E.J. Nelson, F.L. Ogden, F. Olivera, R.G. Quimpo, T.A. Seybert, W.T. Sloan, and F. Theurer, 2000. GIS Modules and Distributed Models of the Watershed. American Society of Engineers, Reston, VA, 120 pp.
- Mustalish, R.W., C. Tucker, K. Klein and B. Evans, 1999. The Development of a GIS for Managing Natural Resources in the Peruvian Amazon. Proc. Manejo de Fauna Silvestre en la Amazona (Conf. on Wildlife Management in the Amazon), Lima, Peru.
- Evans, B.M., 1998. Development of an Historic State-Wide Defoliation Database in Pennsylvania. In: Proc. 1st International Conference On Geospatial Information in Agriculture and Forestry, Lake Buena Vista, FL, pp. 309-313 (Vol. II).
- Evans, B.M. and E. Nizeyimana, 1998. GIS-Based Quantification of Regional Nutrient Loads. Proc. 3rd International Conf. On Diffuse Pollution, Edinburgh, Scotland, pp. 48-55.
- Evans, B.M., 1998. GIS-Based Quantification of Statewide NPS Nutrient Loads in Pennsylvania. In: Proc. Watershed Management: Moving from Theory to Implementation, Denver, CO, pp. 841-848.

Petersen, G.W., E. Nizeyimana, and B.M. Evans, 1998. Applications of Geographic Information Systems in Soil Degradation Assessments. In: B.A. Stewart (ed) Methodologies for Assessing Soil Degradation, Advances in Soil Science, CRC Press, Boca Raton, FL.

Nizeyimana, E. and B.M. Evans, 1997. Evaluation of Potential GIS/Groundwater Model Linkages. Environmental Resources Research Institute, Penn State University, Pub. No. ER9711, 24pp.

Nizeyimana, E., B.M. Evans, M.C. Anderson, G.W. Petersen, D.R. DeWalle, W.E. Sharpe, J.M. Hamlett, and B.R. Swistock, 1997. Quantification of NPS Pollution Loads within Pennsylvania Watersheds. Environ. Resources Research Institute, Pennsylvania State University, Pub. No. ER9708, 61pp.

Mustalish, R.W., B.M. Evans, C. Tucker and K. Klein, 1996. Development of a Phytohabitat Index for Medicinal Plants in the Peruvian Amazon. Proc. Int. Symp. Medicinal and Aromatic Plants, Acta Hort. 426, ISHS.

Evans, B.M., M.C. Anderson, E. Nizeyimana and G. Baumer, 1996. Specification of a GIS-Based Spatial Decision Support System for Use in the Statewide Evaluation of Non-Point Source Pollution Problems: Final Report to the PA Dept. of Environmental Protection. Environmental Resources Research Institute, Pennsylvania State University, Pub. No. ER9605, 43pp.

Myers, W.L., B.M. Evans and M.C. Anderson, 1996. Spatial (In)consistency of Watershed Delineations Among Agencies and Scales in Pennsylvania. In: Proc. 2nd International Symp. On Spatial Accuracy Assessment in Natural Resources and Environ. Sciences, Colo. State Univer., Fort Collins, CO.

Nizeyimana, E., G.W. Petersen, M.C. Anderson, B.M. Evans, J.M. Hamlett and G.M. Baumer, 1996. GIS/Census Data Assessment of Nitrogen Loadings from Septic Systems in Pennsylvania. Journal of Environmental Quality, Vol. 25, pp. 346-354.

Hamlett, J.M., G.W. Petersen, B.M. Evans, L.A. Deichert, S.R. Messier, M.C. Anderson, and G.M. Baumer, 1995. Statewide Screening of Groundwater Nitrate Pollution Potential from Agricultural Lands in Pennsylvania. Environ. Resources Research Institute, Pennsylvania State University, Pub. No. ER9502.

Evans, B.M., R.A. White, G.W. Petersen, J.M. Hamlett, G.M. Baumer and A.J. McDonnell, 1994. Land Use and Nonpoint Pollution Study of the Delaware River Basin. Environmental Resources Research Institute, The Pennsylvania State University, Pub. No. ER94-06, 76 pp.

Mercado, R.M. and B.M. Evans, 1993. Regional Impact Assessment of Agricultural/Industrial Practices on Water Resources Using Integrated GIS/Remote Sensing/Computer Modeling Technology. In: Proc. Workshop on Development of Water Related Information Systems, Alexandria, VA, May 1993.

Evans, B.M., J. Grimm, L. Thornton and P. Saunders, 1992. Linking GIS with Hydrologic Modeling. In: Proc. Water Forum '92, Baltimore, MD, pp. 499-504.

Sasowsky, K.C., G.W. Petersen, and B.M. Evans, 1992. Accuracy of SPOT Digital Elevation Model Derivatives: Utility for Alaska's North Slope. Photog. Engineer. & Remote Sensing, Vol. 58, No. 6, pp. 815-824.

Evans, B.M. and W.L. Myers, 1990. A GIS-Based Approach to Evaluating Regional Groundwater Pollution Potential with DRASTIC. *Journal of Soil and Water Conservation*, pp. 242-245.

Walker, D.A., E. Binnian, B.M. Evans, N.D. Lederer, E. Nordstrand, and P.J. Webber, 1989. Terrain, Vegetation and Landscape Evolution of the R4D Research Site, Brooks Range Foothills, Alaska. *Journal of Holarctic Ecology*.

Evans, B.M., D.A. Walker, C.S. Benson, E.A. Nordstrand, G.W. Petersen. 1989. Spatial Interrelationship Between Terrain, Snow Distribution and Vegetation Patterns at an Arctic Foothills Site in Alaska. *Journal of Holarctic Ecology*, 12:270-278.

Evans, B.M. and D.A. Miller, 1988. Modeling Nonpoint Pollution at the Watershed Level with the Aid of a Geographic Information System. In: *Proc. Symp. on Nonpoint Pollution: Policy, Economy, Management, and Appropriate Technology*, American Water Resources Assoc.

Evans, B.M. and D.A. Miller, 1988. Quantifying Hydrologic Model Input with a Geographic Information System. In: *Proc. Symp. on Floodplain and Stormwater Management*, Penn State University Office of Continuing Education.

Evans, B.M. 1987. Assessing Regional Groundwater Pollution Potential with a Geographic Information System. In: *Proc. 3rd Annual Groundwater Technology Conf.*, The City University of New York, NYC.

Myers, W.L., B.M. Evans and G.M. Baumer, 1987. Synergism Between Human Interpretation and Digital Pattern Recognition in Preparation of Thematic Maps. *ISPRS J. Photogramm. Remote Sensing*, 44: 85-96.

Evans, B.M. and L. Mata. 1984. Acquisition of 35-mm Oblique Photographs for Stereoscopic Analysis and Measurement. *Photogrammetric Engineering and Remote Sensing*, 50 (11).

Evans, B.M. and L. Mata. 1984. Aerial Photographic Analyses of Hazardous Waste Disposal Sites. *Proceedings, National Conference on Hazardous Waste and Environmental Emergencies*, Houston, TX.

Evans, B.M. 1983. Using Aerial Photography to Detect Vegetation Damage in a Large-Scale Air Quality Monitoring Program. *Proceedings, Ninth Biennial Workshop on Color Aerial Photography in the Plant Science*, Orlando, FL.

Evans, B.M. 1982. Aerial Photographic Analysis of Septic System Performance. *Photogrammetric Engineering and Remote Sensing*, 48(11).

Evans, B.M. 1979. Aerial Sanitary Surveys in Rural Lake Wastewater Planning. *Proceedings, Sixth National Conference on Individual On-site Wastewater Systems*, National Sanitation Foundation, Ann Arbor, MI.