

## Appendix D: Studies Included in the Screening Analysis

This appendix contains a list of studies grouped by urban, agriculture, and wastewater measures that were used in the screening analysis documented in Appendix C.

### Urban

- Adeola, S., Revitt, M., Shutes, B., Garellick, H., Jones, H., & Jones, C. (2009). Constructed wetland control of BOD levels in airport runoff. *International Journal of Phytoremediation*, 11(1), 1-10.
- Ahiablame, L. M., Engel, B. A., & Chaubey, I. (2012). Effectiveness of low impact development practices: literature review and suggestions for future research. *Water, Air, & Soil Pollution*, 223(7), 4253-4273.
- Andersen, C., Foster, I., & Pratt, C. (1999). The role of urban surfaces (permeable pavements) in regulating drainage and evaporation: development of a laboratory simulation experiment. *Hydrological Processes*, 13(4), 597-609.
- Anderson, A., Smolek, A., & Hunt, W. *Permeable Pavement and Filterra Performance at an Amtrak Station in North Carolina, USA*. Paper presented at the World Environmental and Water Resources Congress 2014@ sWater Without Borders.
- Andrews, D.M., Barton, C. D., Kolka, R. K., Rhoades, C. C. & Dattilo, A. J. (2011). Soil and Water Characteristics in Restored Canebrake and Forest Riparian Zones1. *JAWRA*, 47(4), 772-784. doi: 10.1111/j.1752-1688.2011.00555.x
- Aulenbach, D. B., & Meisheng, N. (1988). Studies on the mechanism of phosphorus removal from treated wastewater by sand. *Journal (Water Pollution Control Federation)*, 2089-2094.
- Awondo, S. N., Egan, K. J., & Dwyer, D. F. (2011). Increasing beach recreation benefits by using wetlands to reduce contamination. *Marine Resource Economics*, 26(1), 1-15.
- Balousek, J. (2003). Quantifying decreases in stormwater runoff from deep tilling, chisel plowing, and compost-amendment. Madison, Wisconsin: Dane County Land Conservation Department.
- Band, L., T. Mittman, D. Nowak, Y. Yang and T. Endreny. Date unknown. Modeling in the Chesapeake Bay Watershed. Effects of Trees in Stream Flow in the Chesapeake Bay. FS Agreement No. 07CO11242300145.
- Bannerman, R. T., Wisconsin. Department of Natural, R., Geological, S., Selbig, W. R., & Madison. (2007). *Evaluation of street sweeping as a stormwater-quality-management tool in three residential basins in Madison, Wisconsin*. Reston, Va.: U.S. Geological Survey.
- Bardin, J., Gautier, A., Barraud, S., & Chocat, B. (2001). The purification performance of infiltration basins fitted with pretreatment facilities: a case study. *Water Science & Technology*, 43(5), 119-128.
- Barraud, S., Dechesne, M., Bardin, J., & Varnier, J. (2005). Statistical analysis of pollution in stormwater infiltration basins. *Water Science & Technology*, 51(02), 1-9.
- Barraud, S., Gautier, A., Bardin, J.-P., & Riou, V. (1999). The impact of intentional stormwater infiltration on soil and groundwater. *Water Science and Technology*, 39(2), 185-192.
- Barrett, M., Walsh, P., Jr., J., & Charbeneau, R. (1998). Performance of Vegetative Controls for Treating Highway Runoff. *Journal of Environmental Engineering*, 124(11), 1121-1128. doi: 10.1061/(ASCE)0733-9372(1998)124:11(1121)
- Barrett, M. E. (2003). Performance, cost, and maintenance requirements of Austin sand filters. *Journal of water resources planning and management*, 129(3), 234-242.
- Barrett, M. E. (2005). Performance comparison of structural stormwater best management practices. *Water Environment Research*, 78-86.
- Barrett, M. E., & Borroum, S. (2001). A Preliminary Assessment of the Cost, Maintenance Requirements and Performance of Sand Filters. *Bridges*, 10(40569), 196.
- Barton, L., & Colmer, T. D. (2006). Irrigation and fertiliser strategies for minimising nitrogen leaching from turfgrass. *Agricultural Water Management*, 80(1–3), 160-175. doi:

[dx.doi.org/10.1016/j.agwat.2005.07.011](https://doi.org/10.1016/j.agwat.2005.07.011)

- Bauer, S., Lloyd, D., Horgan, B. P., & Soldat, D. J. (2012). Agronomic and Physiological Responses of Cool-Season Turfgrass to Fall-Applied Nitrogen. *Crop Sci.*, 52(1), 1-10. doi: 10.2135/cropsci2011.03.0124
- Bckstrm, M. (2002). Sediment transport in grassed swales during simulated runoff events. *Water Science & Technology*, 45(7), 41-49.
- Bean, E. Z. (2005). A field study to evaluate permeable pavement surface infiltration rates, runoff quantity, runoff quality, and exfiltrate quality.
- Bean, E. Z., Hunt, W. F., & Bidelsbach, D. A. (2007). Field survey of permeable pavement surface infiltration rates. *Journal of Irrigation and Drainage Engineering*, 133(3), 249-255.
- Bean, E. Z., Hunt, W. F., Bidelsbach, D. A., & Smith, J. (2004). *Study on the surface infiltration rate of permeable pavements*. Paper presented at the Proceedings of the American Society of Civil Engineers and EWRI 2004 world water and environmental resources congress, Salt Lake City, UT, USA.
- Beecham, S. C., Lucke, T., & Myers, B. (2010). *Designing porous and permeable pavements for stormwater harvesting and reuse*. International Association for Hydro-Environment Engineering and Research.
- Bell, W. (1995). *Assessment of the pollutant removal efficiencies of Delaware sand filter BMPs*: City of Alexandria, Department of Transportation and Environmental Services.
- Bender, G. M., & Terstriep, M. L. (1984a). Effectiveness of street sweeping in urban runoff pollution control. *Science of The Total Environment*, 33(1-4), 185-192. doi:dx.doi.org/10.1016/0048-9697(84)90392-9
- Bender, G. M., & Terstriep, M. L. (1984b). Effectiveness of street sweeping in urban runoff pollution control. *Science of The Total Environment*, 33(1-4), 185-192. doi:dx.doi.org/10.1016/0048-9697(84)90392-9
- Bernhardt, E. S., Palmer, M. A., Allan, J. D., Alexander, G., Barnas, K., Brooks, S., . . . Sudduth, E. (2005). Synthesizing U.S. River Restoration Efforts. *Science*, 308(5722), 636-637. doi: 10.1126/science.1109769
- Berretta, C., Saurabh R & Sansalone, J.J. ( 2011). Quantifying Nutrient Loads Associated with Urban Particulate Matter (PM) and Biogenic/Litter Recovery through Current MS4 Source control and Maintenance Practices (Maintenance Matters!). Final Report To Florida Stormwater Association Educational Foundation (FSAEF). University of Florida.
- Bierman, P. M., Horgan, B. P., Rosen, C. J., Hollman, A. B., & Pagliari, P. H. (2010). Phosphorus Runoff from Turfgrass as Affected by Phosphorus Fertilization and Clipping Management. *J. Environ. Qual.*, 39(1), 282-292. doi: 10.2134/jeq2008.0505
- Bill Hunt, P., Scott Stevens, P., & David Mayes, P. (2002). Permeable pavement use and research at two sites in Eastern North Carolina. *Bridges*, 10(40644), 39.
- Blecken, G.-T., Zinger, Y., Deletić, A., Fletcher, T. D., & Viklander, M. (2009a). Impact of a submerged zone and a carbon source on heavy metal removal in stormwater biofilters. *ecological engineering*, 35(5), 769-778.
- Blecken, G.-T., Zinger, Y., Deletić, A., Fletcher, T. D., & Viklander, M. (2009b). Influence of intermittent wetting and drying conditions on heavy metal removal by stormwater biofilters. *Water research*, 43(18), 4590-4598.
- Borne, K. E. (2014). Floating treatment wetland influences on the fate and removal performance of phosphorus in stormwater retention ponds. *Ecological Engineering*, 69, 76-82.
- Bowman, D. C., Cherney, C. T., & Rufty, T. W. (2002a). Fate and Transport of Nitrogen Applied to Six Warm-Season Turfgrasses Research supported by the North Carolina Agric. Exp. Stn. and the Turfgrass Council of North Carolina. *Crop Sci.*, 42(3), 833-841. doi: 10.2135/cropsci2002.8330
- Bowman, D. C., Cherney, C. T., & Rufty, T. W. (2002b). Fate and Transport of Nitrogen Applied to Six Warm-Season Turfgrasses Research supported by the North Carolina Agric. Exp. Stn. and the Turfgrass Council of North Carolina. *Crop Sci.*, 42(3), 833-841. doi: 10.2135/cropsci2002.8330
- Bratieres, K., Fletcher, T., Deletić, A., & Zinger, Y. (2008). Nutrient and sediment removal by stormwater biofilters: A large-scale design optimisation study. *Water Research*, 42(14), 3930-3940.
- Brattebo, B. O., & Booth, D. B. (2003). Long-term stormwater quantity and quality performance of

- permeable pavement systems. *Water research*, 37(18), 4369-4376.
- Bright, T., Hathaway, J., Hunt III, W., de los Reyes III, F., & Burchell, M. (2010). Impact of storm-water runoff on clogging and fecal bacteria reduction in sand columns. *Journal of Environmental Engineering*, 136(12), 1435-1441.
- Bright, T. M. (2007). An examination of a Dune Infiltration System's impact on coastal hydrology and bacteria removal.
- Bright, T. M., Burchell, M. R., Hunt, W. F., & Price, W. (2011). Feasibility of a dune infiltration system to protect North Carolina beaches from fecal bacteria contaminated storm water. *Journal of Environmental Engineering*, 137(10), 968-979.
- Brown, R., & Hunt, W. (2011). Underdrain configuration to enhance bioretention exfiltration to reduce pollutant loads. *Journal of Environmental Engineering*, 137(11), 1082-1091.
- Brown, R., Line, D., & Hunt, W. (2011). LID treatment train: Pervious concrete with subsurface storage in series with bioretention and care with seasonal high water tables. *Journal of Environmental Engineering*, 138(6), 689-697.
- Brown, R. A., & Hunt III, W. F. (2009). Impacts of construction activity on bioretention performance. *Journal of Hydrologic Engineering*, 15(6), 386-394.
- Brown, R. A., & Hunt III, W. F. (2010). Impacts of media depth on effluent water quality and hydrologic performance of undersized bioretention cells. *Journal of Irrigation and Drainage Engineering*, 137(3), 132-143.
- Brown, R. A., & Hunt, W. F. (2012). Improving bioretention/biofiltration performance with restorative maintenance. *Water Science & Technology*, 65(2), 361-367.
- Bukaveckas, P. A. (2007). Effects of Channel Restoration on Water Velocity, Transient Storage, and Nutrient Uptake in a Channelized Stream. *Environmental Science & Technology*, 41(5), 1570-1576. doi: 10.1021/es061618x
- Burchell, M. R., Hunt, W. F., & Bright, T. M. (2007). Kure beach dune infiltration system: NC Department of Transportation Research and Analysis Group.
- Cahill, S. a. O. D. a. I. D. (2010). Nitrogen Release from Coated Urea Fertilizers in Different Soils. *Communications in Soil Science and Plant Analysis*, 41(10), 1245-1256. doi: 10.1080/00103621003721437
- Carleton, J., Grizzard, T., Godrej, A., & Post, H. (2001). Factors affecting the performance of stormwater treatment wetlands. *Water Research*, 35(6), 1552-1562.
- Carleton, J. N. (1997). *An investigation of the performance of a constructed wetland in treating urban stormwater*. Virginia Polytechnic Institute and State University.
- Carmen, N., Hunt, W., and Anderson, A. (2014) Evaluating the Performance of Disconnected Downspouts on Existing and Amended Lawns as a Stormwater Control Measure. World Environmental and Water Resources Congress 2014: pp. 125-134. Carmen, W. F. H. a. A. R. A. a. N. B. Evaluating the Performance of Disconnected Downspouts on Existing and Amended Lawns as a Stormwater Control Measure. 125-134. doi: 10.1061/9780784413548.015
- Carpenter, D. D., & Hallam, L. (2009). Influence of planting soil mix characteristics on bioretention cell design and performance. *Journal of Hydrologic Engineering*, 15(6), 404-416.
- Castelle, A. J., Johnson, A. W., & Conolly, C. (1994). Wetland and Stream Buffer Size Requirements—A Review. *J. Environ. Qual.*, 23(5), 878-882. doi: 10.2134/jeq1994.00472425002300050004x
- Chapman, C., & Horner, R. R. (2010). Performance assessment of a street-drainage bioretention system. *Water Environment Research*, 82(2), 109-119.
- Cho, K. W., Song, K. G., Cho, J. W., Kim, T. G., & Ahn, K. H. (2009). Removal of nitrogen by a layered soil infiltration system during intermittent storm events. *Chemosphere*, 76(5), 690-696.
- Clark, S., & Pitt, R. (1999). Stormwater runoff treatment: evaluation of filtration media. *EPA. US.*
- Clark, S., & Pitt, R. (2009). Storm-water filter media pollutant retention under aerobic versus anaerobic conditions. *Journal of Environmental Engineering*, 135(5), 367-371.
- Clary, J., Jones, J., Urbonas, B., Quigley, M., Strecker, E., & Wagner, T. (2008). Can Stormwater BMPs Remove Bacteria? New Findings from the International Stormwater BMP Database. *Stormwater Magazine May*, 1-14.
- Collins, K. A., Hunt, W. F., & Hathaway, J. M. (2006). *Evaluation of various types of permeable pavements with respect to water quality improvement and flood control*. Paper presented at the

8th International Conference on Concrete Block Paving.

- Collins, K. A., Hunt, W. F., & Hathaway, J. M. (2008). Hydrologic comparison of four types of permeable pavement and standard asphalt in eastern North Carolina. *Journal of Hydrologic Engineering*, 13(12), 1146-1157.
- Collins, K. A., Hunt, W. F., & Hathaway, J. M. (2009). Side-by-side comparison of nitrogen species removal for four types of permeable pavement and standard asphalt in eastern North Carolina. *Journal of Hydrologic Engineering*, 15(6), 512-521.
- Collins, K. A., Lawrence, T. J., Stander, E. K., Jontos, R. J., Kaushal, S. S., Newcomer, T. A., . . . Cole Ekberg, M. L. (2010). Opportunities and challenges for managing nitrogen in urban stormwater: A review and synthesis. *Ecological Engineering*, 36(11), 1507-1519.
- Damodaram, C., Giacomoni, M. H., Prakash Khedun, C., Holmes, H., Ryan, A., Saour, W., & Zechman, E. M. (2010). Simulation of Combined Best Management Practices and Low Impact Development for Sustainable Stormwater Management1: Wiley Online Library.
- Daniel, T. C., Mc Guire, P. E., Stoffel, D., & Miller, B. (1979). Sediment and Nutrient Yield from Residential Construction Sites1. *J. Environ. Qual.*, 8(3), 304-308. doi: 10.2134/jeq1979.00472425000800030008x
- Datry, T., Malard, F., & Gibert, J. (2004). Dynamics of solutes and dissolved oxygen in shallow urban groundwater below a stormwater infiltration basin. *Science of the Total Environment*, 329(1), 215-229.
- Datry, T., Malard, F., Vitry, L., Hervant, F., & Gibert, J. (2003). Solute dynamics in the bed sediments of a stormwater infiltration basin. *Journal of Hydrology*, 273(1), 217-233.
- Davis, A. P. (2007). Field performance of bioretention: Water quality. *Environmental Engineering Science*, 24(8), 1048-1064.
- Davis, A. P. (2008). Field performance of bioretention: Hydrology impacts. *Journal of Hydrologic Engineering*, 13(2), 90-95.
- Davis, A. P., Hunt, W. F., Traver, R. G., & Clar, M. (2009). Bioretention technology: Overview of current practice and future needs. *Journal of Environmental Engineering*, 135(3), 109-117.
- Davis, A. P., Shokouhian, M., Sharma, H., & Minami, C. (2001). Laboratory study of biological retention for urban stormwater management. *Water Environment Research*, 5-14.
- Davis, A. P., Shokouhian, M., Sharma, H., & Minami, C. (2006). Water quality improvement through bioretention media: Nitrogen and phosphorus removal. *Water Environment Research*, 78(3), 284-293.
- Davis, A. P., Shokouhian, M., Sharma, H., Minami, C., & Winogradoff, D. (2003). Water quality improvement through bioretention: Lead, copper, and zinc removal. *Water Environment Research*, 73-82.
- Davis, A. P., Stagge, J. H., Jamil, E., & Kim, H. (2012). Hydraulic performance of grass swales for managing highway runoff. *Water research*, 46(20), 6775-6786.
- Davis, A. P., Traver, R. G., Hunt, W. F., Lee, R., Brown, R. A., & Olszewski, J. M. (2011). Hydrologic performance of bioretention storm-water control measures. *Journal of Hydrologic Engineering*, 17(5), 604-614.
- Davis Jr, S. L., Norviel, V. A., & Ruebush, A. M. (1989). Process for removing water-soluble organics from produced water: Google Patents.
- DeBusk, K., & Wynn, T. (2011). Storm-water bioretention for runoff quality and quantity mitigation. *Journal of Environmental Engineering*, 137(9), 800-808.
- Dechesne, M., Barraud, S., & Bardin, J.-P. (2004a). Indicators for hydraulic and pollution retention assessment of stormwater infiltration basins. *Journal of Environmental Management*, 71(4), 371-380.
- Dechesne, M., Barraud, S., & Bardin, J.-P. (2004b). Spatial distribution of pollution in an urban stormwater infiltration basin. *Journal of contaminant hydrology*, 72(1), 189-205.
- Dechesne, M., Barraud, S., & Bardin, J.-P. (2005). Experimental assessment of stormwater infiltration basin evolution. *Journal of environmental engineering*, 131(7), 1090-1098.
- Deletic, A., & Fletcher, T. D. (2006). Performance of grass filters used for stormwater treatment—a field and modelling study. *Journal of Hydrology*, 317(3), 261-275.
- Denich, C., & Bradford, A. (2010). Estimation of evapotranspiration from bioretention areas using

- weighing lysimeters. *Journal of Hydrologic Engineering*, 15(6), 522-530.
- Dierkes, C., Holte, A., & Geiger, W. (1999). Heavy metal retention within a porous pavement structure. Paper presented at the Proc. the Eighth International Conference on Urban Storm Drainage.
- Dierkes, C., Lohmann, M., Becker, M., & Raasch, U. (2005). Pollution retention of different permeable pavements with reservoir structure at high hydraulic loads. Paper presented at the Proceedings of the 10th International Conference on Urban Drainage, Copenhagen, Denmark.
- Dietz, M. E. (2007). Low impact development practices: A review of current research and recommendations for future directions. *Water, air, and soil pollution*, 186(1-4), 351-363.
- Dietz, M. E., & Clausen, J. C. (2005). A field evaluation of rain garden flow and pollutant treatment. *Water, Air, and Soil Pollution*, 167(1-4), 123-138.
- Dietz, M. E., & Clausen, J. C. (2006). Saturation to improve pollutant retention in a rain garden. *Environmental science & technology*, 40(4), 1335-1340.
- Dorman, M., Hartigan, H., Johnson, F., & Maestri, B. (1988). Retention, detention, and overland flow for pollutant removal from highway stormwater runoff: interim guidelines for management measures. Final report, September 1985-June 1987: Versar, Inc., Springfield, VA (USA).
- Doyle, Martin W. and Stanley Emily H. & Harbor Jon M. (2003). Hydrogeomorphic controls on phosphorus retention in streams. *Water Resources Research*, 39(6), n/a--n/a. doi: 10.1029/2003WR002038
- Dreelin, E. A., Fowler, L., & Ronald Carroll, C. (2006). A test of porous pavement effectiveness on clay soils during natural storm events. *Water Research*, 40(4), 799-805.
- Easton, Z. M., & Petrovic, A. M. (2004a). Fertilizer Source Effect on Ground and Surface Water Quality in Drainage from Turfgrass. *J. Environ. Qual.*, 33(2), 645-655. doi: 10.2134/jeq2004.6450
- Easton, Z. M., & Petrovic, A. M. (2004b). Fertilizer Source Effect on Ground and Surface Water Quality in Drainage from Turfgrass. *J. Environ. Qual.*, 33(2), 645-655. doi: 10.2134/jeq2004.6450
- Eck, B. J., Winston, R. J., Hunt, W. F., & Barrett, M. E. (2011). Water quality of drainage from permeable friction course. *Journal of Environmental Engineering*, 138(2), 174-181.
- Effectiveness of street sweeping and washing for controlling ambient \ TSP\ . (2005). *Atmospheric Environment*, 39(10), 1891 - 1902. doi:dx.doi.org/10.1016/j.atmosenv.2004.12.010
- Emerson, C. H., & Traver, R. G. (2008). Multiyear and seasonal variation of infiltration from storm-water best management practices. *Journal of irrigation and drainage Engineering*, 134(5), 598-605.
- Fach, S., & Geiger, W. (2005). Effective pollutant retention capacity of permeable pavements for infiltrated road runoffs determined by laboratory tests. *Water science and technology*, 51(2), 37-46.
- Fach, S., Geiger, W., & Dierkes, C. (2002). Development of an assessment procedure for permeable pavements. *9th International Conference of Urban Drainage—Global Solutions for Urban Drainage*. Oregon, USA.
- Farrell, A. C., & Scheckenberger, R. B. (2003). An assessment of long-term monitoring data for constructed wetlands for urban highway runoff control. *Water quality research journal of Canada*, 38(2), 283-315.
- Fassman, E. A., & Blackbourn, S. (2010). Urban runoff mitigation by a permeable pavement system over impermeable soils. *Journal of Hydrologic Engineering*, 15(6), 475-485.
- Fischer, D., Charles, E. G., & Baehr, A. L. (2003). Effects of stormwater infiltration on quality of groundwater beneath retention and detention basins. *Journal of Environmental Engineering*, 129(5), 464-471.
- Fletcher, T. D., Peljo, L., Fielding, J., Wong, T. H., & Weber, T. (2002). The performance of vegetated swales for urban stormwater pollution control. *Bridges*, 10(40644), 51.
- Fluvial sediment delivery to a Coastal Plain estuary in the Atlantic Drainage of the United States. (1991). *Marine Geology*, 98(1), 121 - 134. doi:dx.doi.org/10.1016/0025-3227(91)90040-B
- Frank, K. W., O'Reilly, K. M., Crum, J. R., & Calhoun, R. N. (2006). The Fate of Nitrogen Applied to a Mature Kentucky Bluegrass Turf. *Crop Sci.*, 46(1), 209-215. doi: 10.2135/cropsci2005.04-0039
- Garbrecht, K., Fox, G., Guzman, J., & Alexander, D. (2009). E. coli transport through soil columns: Implications for bioretention cell removal efficiency. *Transactions of the ASABE*, 52(2), 481-486.
- Gilbert, J. K., & Clausen, J. C. (2006). Stormwater runoff quality and quantity from asphalt, paver, and crushed stone driveways in Connecticut. *Water research*, 40(4), 826-832.

- Goldberg, J. S. (1993). *Dayton Avenue Swale Biofiltration Study*: Seattle Engineering Department, Drainage and Wastewater Utility.
- Good, J., O'Sullivan, A., Wicke, D., & Cochrane, T. (2012). Contaminant removal and hydraulic conductivity of laboratory rain garden systems for stormwater treatment. *Water Science & Technology*, 65(12), 2154-2161.
- Guillard, K., & Kopp, K. L. (2004). Nitrogen Fertilizer Form and Associated Nitrate Leaching from Cool-Season Lawn Turf. *J. Environ. Qual.*, 33(5), 1822-1827. doi: 10.2134/jeq2004.1822
- Han, J. a. W. J. S. a. A. C. (2005). Suspended Sediment Removal by Vegetative Filter Strip Treating Highway Runoff. *Journal of Environmental Science and Health, Part A*, 40(8), 1637-1649. doi: 10.1081/ESE-200060683
- Harper, H. H. (1988). Effects of stormwater management systems on groundwater quality. *FDEP Project# WM190*. Florida Department of Environmental Regulation, Tallahassee, FL.
- Harrison, M. D., Groffman, P. M., Mayer, P. M., & Kaushal, S. S. (2012). Microbial biomass and activity in geomorphic features in forested and urban restored and degraded streams. *Ecological Engineering*, 38(1), 1-10. doi:dx.doi.org/10.1016/j.ecoleng.2011.09.001
- Haselbach, L. M., Valavalala, S., & Montes, F. (2006). Permeability predictions for sand-clogged Portland cement pervious concrete pavement systems. *Journal of environmental management*, 81(1), 42-49.
- Hathaway, J., & Hunt, W. (2009). Evaluation of storm-water wetlands in series in Piedmont North Carolina. *Journal of Environmental Engineering*, 136(1), 140-146.
- Hathaway, J., Hunt, W., Graves, A., & Wright, J. (2011). Field evaluation of bioretention indicator bacteria sequestration in Wilmington, North Carolina. *Journal of Environmental Engineering*, 137(12), 1103-1113.
- Hathaway, J., Hunt, W., & Jadlocki, S. (2009). Indicator bacteria removal in storm-water best management practices in Charlotte, North Carolina. *Journal of Environmental Engineering*, 135(12), 1275-1285.
- Hathaway, J. M. (2010). An Evaluation of Indicator Bacteria Transport in Stormwater Runoff and Removal in Stormwater Control Measures.
- Hatt, B., Lewis, J., Deletic, A., & Fletcher, T. (2007). Insights from the design, construction and operation of an experimental stormwater biofiltration system. *Rainwater and Urban Design 2007*, 356.
- Hatt, B. E., Fletcher, T. D., & Deletic, A. (2008). Hydraulic and pollutant removal performance of fine media stormwater filtration systems. *Environmental science & technology*, 42(7), 2535-2541.
- Hatt, B. E., Fletcher, T. D., & Deletic, A. (2009). Hydrologic and pollutant removal performance of stormwater biofiltration systems at the field scale. *Journal of Hydrology*, 365(3), 310-321.
- Haynes, M.A, McLaughlin R.A., and Heitman, J.L. (2013). Comparison of Methods to Remediate Compacted Soils for Infiltration and Vegetative Establishment. *Open Journal of Soil Science*, 3(5):225-234.
- He, S.-B., Yan, L., Kong, H.-N., Liu, Z.-M., Wu, D.-Y., & Hu, Z.-B. (2007). Treatment efficiencies of constructed wetlands for eutrophic landscape river water. *Pedosphere*, 17(4), 522-528.
- Heckman, J. R., & Kluchinski, D. (1996). Chemical Composition of Municipal Leaf Waste and Hand-Collected Urban Leaf Litter. *J. Environ. Qual.*, 25(2), 355-362. doi: 10.2134/jeq1996.00472425002500020021x
- Henderson, C. F. K. (2008). *The chemical and biological mechanisms of nutrient removal from stormwater in bioretention systems*. Griffith University.
- Herrera. 2008. The Effects of Trees on Stormwater Runoff. Prepared for Seattle Public Utilities. Herrera Environmental Consultants, Inc. Seattle, Washington.
- Hey, D. L., Barrett, K. R., & Biegen, C. (1994). The hydrology of four experimental constructed marshes. *Ecological Engineering*, 3(4), 319-343.
- Hielema, E. J. (1996). *Hydrologic simulation of the Klahanie Catchment, King County, Washington, with and without a landscape consisting of soil amended with compost*. University of Washington.
- Hong, E., Seagren, E. A., & Davis, A. P. (2006). Sustainable oil and grease removal from synthetic stormwater runoff using bench-scale bioretention studies. *Water Environment Research*, 78(2), 141-155.
- Horgan, B. P., Branham, B. E., & Mulvaney, R. L. (2002). Mass Balance of 15N Applied to Kentucky

- Bluegrass Including Direct Measurement of Denitrification. *Crop Sci.*, 42(5), 1595-1601. doi: 10.2135/cropsci2002.1595
- Horner, R., & Horner, C. (1995). Design, Construction, and Evaluation of a Sand Filter Stormwater Treatment System. Part II: Performance Monitoring. *Unpublished Report to Alaska Marine Lines, Seattle, Washington.*
- Horner, R. R., & Reiners, J. (2008). Broadview Green Grid Natural Drainage System performance monitoring.
- Hosen, J. D. a. M. O. T. a. F. C. M. a. P. M. A. (2014). Dissolved Organic Matter Quality and Bioavailability Changes Across an Urbanization Gradient in Headwater Streams. *Environmental Science & Technology*, 48(14), 7817-7824. doi: 10.1021/es501422z
- Hsieh, C.-h., & Davis, A. P. (2005). Evaluation and optimization of bioretention media for treatment of urban storm water runoff. *Journal of Environmental Engineering*, 131(11), 1521-1531.
- Hsieh, C.-H., & Davis, A. P. (2005). Multiple-event study of bioretention for treatment of urban storm water runoff. *Water Science & Technology*, 51(3), 177-181.
- Hsieh, C.-h., Davis, A. P., & Needelman, B. A. (2007). Nitrogen removal from urban stormwater runoff through layered bioretention columns. *Water Environment Research*, 79(12), 2404-2411.
- Huber, W., & Cannon, L. (2002). Modeling Non-Directly Connected Impervious Areas in Dense Neighborhoods *Global Solutions for Urban Drainage* (pp. 1-12): American Society of Civil Engineers.
- Hunt, W., Greenway, M., Moore, T., Brown, R., Kennedy, S., Line, D., & Lord, W. (2011). Constructed Storm-Water Wetland Installation and Maintenance: Are We Getting It Right? *Journal of Irrigation and Drainage Engineering*, 137(8), 469-474.
- Hunt, W., Jarrett, A., Smith, J., & Sharkey, L. (2006). Evaluating bioretention hydrology and nutrient removal at three field sites in North Carolina. *Journal of Irrigation and Drainage Engineering*, 132(6), 600-608.
- Hunt, W., Smith, J., Jadlocki, S., Hathaway, J., & Eubanks, P. (2008). Pollutant removal and peak flow mitigation by a bioretention cell in urban Charlotte, NC. *Journal of Environmental Engineering*, 134(5), 403-408.
- Hunt, W. and Hathaway J. and Winston R. & Jadlocki, S. (2010). Runoff Volume Reduction by a Level Spreader–Vegetated Filter Strip System in Suburban Charlotte, N.C. *Journal of Hydrologic Engineering*, 15(6), 499-503. doi: 10.1061/(ASCE)HE.1943-5584.0000160
- Hunt, W. F., Davis, A. P., & Traver, R. G. (2011). Meeting hydrologic and water quality goals through targeted bioretention design. *Journal of Environmental Engineering*, 138(6), 698-707.
- Hunt, W. F., & Lord, W. G. (2006). *Bioretention performance, design, construction, and maintenance*: NC Cooperative Extension Service.
- Richardson, C. J., N.E. Flanagan, M. Ho & J. W. Pahl. (2011). Integrated stream and wetland restoration: A watershed approach to improved water quality on the landscape. *Ecological Engineering*, 37(1), 25 - 39. doi:dx.doi.org/10.1016/j.ecoleng.2010.09.005
- Barton, L & T. D. Colmer. (2006). Irrigation and fertiliser strategies for minimising nitrogen leaching from turfgrass. *Agricultural Water Management*, 80(1–3), 160 - 175.  
doi:dx.doi.org/10.1016/j.agwat.2005.07.011
- James, W. (2004). Clogging of permeable concrete block pavement by street particulates and rain. *Innovative modeling of urban water systems, CHI monograph*, 12.
- Jeffries, C., Duffy, A., Berwick, N., McLean, N., & Hemingway, A. (2009). Sustainable Urban Drainage Systems (SUDS) treatment train assessment tool. *Water Science & Technology*. 60 (5).
- Johnson, S. R., Evans, R. O. , Osmond, D. L. and Gilliam, L. W. ( 2013). Riparian buffer located in an upland landscape position does not enhance nitrate-nitrogen removal. *Ecological Engineering*, 52:252 - 261.
- Jones, M. P., & Hunt, W. F. (2009). Bioretention impact on runoff temperature in trout sensitive waters. *Journal of Environmental Engineering*, 135(8), 577-585.
- Jones, M. P., & Hunt, W. F. (2010). Effect of storm-water wetlands and wet ponds on runoff temperature in trout sensitive waters. *Journal of Irrigation and Drainage Engineering*, 136(9), 656-661.
- Jordan, T. E., Correll, D. L., & Weller, D. E. (1993). Nutrient Interception by a Riparian Forest Receiving Inputs from Adjacent Cropland. *J. Environ. Qual.*, 22(3), 467-473. doi:

10.2134/jeq1993.00472425002200030010x

- Jähnig, S. C., Lorenz, A. W., Hering, D., Antons, C., Sundermann, A., Jedicke, E., & Haase, P. (2011). River restoration success: a question of perception. *Ecological Applications*, 21(6), 2007-2015. doi: 10.1890/10-0618.1
- Kadlec, R. H., & Wallace, S. (2008). *Treatment wetlands*: CRC press.
- Karasawa, A., Toriiminami, K., Ezumi, N., & Kamaya, K. (2006). *Evaluation of performance of water-retentive concrete block pavements*. Paper presented at the 8th International Conference on Concrete Block Paving.
- Kaushal, S. S., Groffman, P. M., Mayer, P. M., Striz, E., & Gold, A. J. (2008). Effects of stream restoration on denitrification in an urbanizing watershed. *Ecological Applications*, 18(3), 789-804. doi: 10.1890/07-1159.1
- Keblin, M. V., Barrett, M. E., Malina, J. F., & Charbeneau, R. J. (1997). *The effectiveness of permanent highway runoff controls: sedimentation/filtration systems*. University of Texas at Austin.
- Kim, H., Seagren, E. A., & Davis, A. P. (2003). Engineered bioretention for removal of nitrate from stormwater runoff. *Water Environment Research*, 355-367.
- Kimberly, A. O. a. N. G. a. E. D. L. Evaluating the Effectiveness of Stormwater Reduction Practices Using Continuous Simulation. 1-10. doi: 10.1061/40737(2004)81
- Kalinovsky, P., Baker, L., & Hobbie, S. (2013). *Quantifying nutrient removal by street sweeping*. Presentation by Paula Kalinovsky at the [2013 International Low Impact Development Conference](#), St. Paul. August 18-21, 2013.
- Klaproth, J.C. & Johson, J.E. (2009). Understanding the Science Behind Riparian Forest Buffers: Effects on Water Quality. Virginia Cooperative Extension Publication 420-151. Virginia Polytechnic Institute and State University
- Knight, E. M. P., Hunt, W. F., & Winston, R. J. (2013). Side-by-side evaluation of four level spreader-vegetated filter strips and a swale in eastern North Carolina. *Journal of Soil and Water Conservation*, 68(1), 60-72.
- Kolsti, K., Burges, S., & Jensen, B. Hydrologic Response of Residential-Scale Lawns on Till Containing Various Amounts of Compost. *Water Resources Series, Technical Report*(147).
- Koon, J. (1995). Evaluation of water quality ponds and swales in the Issaquah/East Lake Sammamish Basins. *King County Surface Water Management and Washington Department of Ecology*. Seattle, WA.
- Kuhns, H., Etyemezian, V., Green, M., Hendrickson, K., McGown, M., Barton, K., & Pitchford, M. (2003). Vehicle-based road dust emission measurement—Part II: Effect of precipitation, wintertime road sanding, and street sweepers on inferred PM10 emission potentials from paved and unpaved roads. *Atmospheric Environment*, 37(32), 4573-4582. doi: dx.doi.org/10.1016/S1352-2310(03)00529-6
- Kuo, J.-T., Yu, S. L., Fassman, E. A., & Pan, H. (1999). *Field test of grassed swale performance in removing runoff pollution*. Paper presented at the WRPMD99. Preparing for the 21st Century.
- Kuo, Y. M., & Muñoz-Carpena, R. (2009). Simplified modeling of phosphorus removal by vegetative filter strips to control runoff pollution from phosphate mining areas. *Journal of Hydrology*, 378(3–4), 343-354. doi: dx.doi.org/10.1016/j.jhydrol.2009.09.039
- Law, N. L., DiBlasi, K., Ghosh, U., Stewart S., Stack, B.P., Belt, K., Pouyat, R., & Welty, C. (2008). *Deriving Reliable Pollutant Removal Rates for Municipal Street Sweeping and Storm Drain Cleanout Programs in the Chesapeake Bay Basin*. A report prepared by the Center for Watershed Protection as fulfillment of the U.S. EPA Chesapeake Bay Program grant CB-973222-01. Center for Watershed Protection, Inc., Ellicott City, MD.
- Le Coustumer, S., & Barraud, S. (2007). Long-term hydraulic and pollution retention performance of infiltration systems. *Water Science & Technology*, 55(4), 235-243.
- Le Coustumer, S., Fletcher, T., Deletic, A., & Barraud, S. (2008). *Influence of time and design on the hydraulic performance of biofiltration systems for stormwater management*. Paper presented at the 11th International Conference on Urban Drainage, Edinburgh, Scotland, 31st August-5th September 2008.
- Lee, D. J., Bowman, D. C., Cassel, D. K., Peacock, C. H., & Rufty, T. W. (2003a). Soil Inorganic Nitrogen under Fertilized Bermudagrass Turf. *Crop Sci.*, 43(1), 247-257. doi: 10.2135/cropsci2003.2470

- Lee, D. J., Bowman, D. C., Cassel, D. K., Peacock, C. H., & Rufty, T. W. (2003b). Soil Inorganic Nitrogen under Fertilized Bermudagrass Turf. *Crop Sci.*, 43(1), 247-257. doi: 10.2135/cropsci2003.2470
- Legret, M., & Colandini, V. (1999). Effects of a porous pavement with reservoir structure on runoff water: water quality and fate of heavy metals. *Water Science and Technology*, 39(2), 111-117.
- Leif, T. (1999). Compost stormwater filter evaluation. *Snohomish County Public Works*.
- Lenhart, H., Hunt, W., & Burchell, M. (2012). Harvestable Nitrogen Accumulation for Five Storm Water Wetland Plant Species: Trigger for Storm Water Control Measure Maintenance? *Journal of Environmental Engineering*, 138(9), 972-978.
- Lenhart, H. A., & Hunt III, W. F. (2010). Evaluating four storm-water performance metrics with a North Carolina coastal plain storm-water wetland. *Journal of Environmental Engineering*, 137(2), 155-162.
- Li, H., & Davis, A. P. (2008). Urban particle capture in bioretention media. I: Laboratory and field studies. *Journal of Environmental Engineering*, 134(6), 409-418.
- Li, H., Sharkey, L. J., Hunt, W. F., & Davis, A. P. (2009). Mitigation of impervious surface hydrology using bioretention in North Carolina and Maryland. *Journal of Hydrologic Engineering*, 14(4), 407-415.
- Li, Y., Deletic, A., & Fletcher, T. (2007). Modelling wet weather sediment removal by stormwater constructed wetlands: Insights from a laboratory study. *Journal of Hydrology*, 338(3), 285-296.
- Line, D., Brown, R., Hunt, W., & Lord, W. (2011). Effectiveness of LID for commercial development in North Carolina. *Journal of Environmental Engineering*, 138(6), 680-688.
- Line, D. a. H. W. (2009). Performance of a Bioretention Area and a Level Spreader-Grass Filter Strip at Two Highway Sites in North Carolina. *Journal of Irrigation and Drainage Engineering*, 135(2), 217-224. doi: 10.1061/(ASCE)0733-9437(2009)135:2(217)
- Line, D. E., & White, N. M. (2007). Effects of Development on Runoff and Pollutant Export. *Water Environment Research*, 79(2), 185-190. doi: 10.2175/106143006X111736
- Liptan, T., & Murase, R. K. (2002). Watergardens as stormwater infrastructure in Portland, Oregon. *Handbook of Water Sensitive Planning and Design*, 125-154.
- Liu, J., & Davis, A. P. (2013). Phosphorus Speciation and Treatment Using Enhanced Phosphorus Removal Bioretention. *Environmental Science & Technology*, 48(1), 607-614. doi: 10.1021/es404022b
- Loucks, E., Garrett, N., & Oriel, K. (2004). Evaluating the Effectiveness of Stormwater Reduction Practices Using Continuous Simulation *Critical Transitions in Water and Environmental Resources Management* (pp. 1-10): American Society of Civil Engineers.
- Lucas, W. C., & Greenway, M. (2008). Nutrient retention in vegetated and nonvegetated bioretention mesocosms. *Journal of Irrigation and Drainage Engineering*, 134(5), 613-623.
- Lucas, W. C., & Greenway, M. (2011). Hydraulic Response and Nitrogen Retention in Bioretention Mesocosms with Regulated Outlets: Part I—Hydraulic Response. *Water Environment Research*, 83(8), 692-702.
- Lucke, T., & Beecham, S. (2011). Field investigation of clogging in a permeable pavement system. *Building Research & Information*, 39(6), 603-615.
- Mangiafico, S. S., & Guillard, K. (2006). Fall Fertilization Timing Effects on Nitrate Leaching and Turfgrass Color and Growth. *J. Environ. Qual.*, 35(1), 163-171. doi: 10.2134/jeq2005.0061
- Mankin, K. R. a. N. D. M. a. B. C. J. a. H. S. L. a. G. W. A. (2007). Grass-Shrub Riparian Buffer Removal of Sediment, Phosphorus, and Nitrogen From Simulated Runoff1. *JAWRA Journal of the American Water Resources Association*, 43(5), 1108--1116. doi: 10.1111/j.1752-1688.2007.00090.x
- Mayer, P. M., Groffman, P. M., Striz, E. A., & Kaushal, S. S. (2010). Nitrogen Dynamics at the Groundwater-Surface Water Interface of a Degraded Urban Stream All rights reserved. No part of this periodical may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the publisher. *J. Environ. Qual.*, 39(3), 810-823. doi: 10.2134/jeq2009.0012
- Mayer, P. M., Reynolds, S. K., McCutchen, M. D., & Canfield, T. J. (2007). Meta-Analysis of Nitrogen Removal in Riparian Buffers. *J. Environ. Qual.*, 36(4), 1172-1180. doi: 10.2134/jeq2006.0462
- McLaughlin, R. (2002). Measures to Control Erosion and Turbidity in Construction Site Runoff Final

Report.

- McLaughlin, R. (2005). Erosion Control *Minimizing water quality impacts of mountain construction projects*.
- McLaughlin, R. (2013). Field Evaluation of Hydromulches for Water Quality and Vegetation Establishment. North Carolina Department of Transportation Project Authorization No. Hwy-2010-14. North Carolina State University, Raleigh, NC.
- McLaughlin, R. (2006). Polyacrylamide blocks for turbidity control on construction sites. *Polyacrylamide blocks for turbidity control on construction sites*. (Vol. ASABE Paper No. 062254).
- McLaughlin, R. (2008). Stilling basin design and operation for water quality field testing NCDOT Research Project HWY-2007-02. North Carolina.
- McLaughlin, R., & King, S. (2008). Monitoring of nutrient and sediment loading from construction sites. *NC DENR, Division of Water Quality. DWQ Contract Number: EW05015*.
- McLaughlin, R., & Markusic, M. (2007). Evaluating sediment capture rates for different sediment basin designs *North Carolina Dept. of Transportation, Project Authorization No. HWY- 2006-17*.
- McLaughlin, R. A., Hayes, S. A., Clinton, D.L., McCaleb, M.S., Jenning, G. D. (2009). Transactions of the ASABE *Water quality improvements using modified sediment control systems on construction sites* (Vol. 52, pp. 1859-1867).
- McLaughlin, R. A., King, S. E., & Jennings, G. D. (2009). Improving construction site runoff quality with fiber check dams and polyacrylamide. *Journal of Soil and Water Conservation*, 64(2), 144-154. doi: 10.2489/jswc.64.2.144
- McLaughlin, R. A. a. B. T. T. (2006). Evaluation of Erosion Control Products with and without Added Polyacrylamide1. *JAWRA Journal of the American Water Resources Association*, 42(3), 675--684. doi: 10.1111/j.1752-1688.2006.tb04484.x
- McNett, J., Hunt, W. F., & Davis, A. P. (2011). Influent pollutant concentrations as predictors of effluent pollutant concentrations for Mid-Atlantic bioretention. *Journal of Environmental Engineering*, 137(9), 790-799.
- Merriman, L. S., & Hunt III, W. F. (2014). Maintenance versus Maturation: Constructed Storm-Water Wetland's Fifth-Year Water Quality and Hydrologic Assessment. *Journal of Environmental Engineering*.
- Merriman, L. S., Wilson, C. E., Winston, R. J., & Hunt, W. F. (2012). Assessing the Importance of Temporary Storage Volume Occupied by Emergent Vegetation in Constructed Storm Water Wetlands. *Journal of Hydrologic Engineering*, 18(10), 1372-1376.
- Messer, T.L., Burchell M.R., Grabow, G.L.,and Osmond, D.L. (2012). Groundwater nitrate reductions within upstream and downstream sections of a riparian buffer. *Ecological Engineering*, 47:297-307.
- Metro, S. Washington Department of Ecology. 1992. *Biofiltration Swale Performance: Recommendations and Design Considerations*.
- Mittman,T.S. 2009. *Assessing the Impact of the Urban Tree Canopy on Streamflow Response: An Extension of Physically Based Hydrologic Modeling to the Suburban Landscape*. A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Geography, Chapel Hill
- Moore, T. L., Hunt, W. F., Burchell, M. R., & Hathaway, J. M. (2011). Organic nitrogen exports from urban stormwater wetlands in North Carolina. *Ecological Engineering*, 37(4), 589-594.
- Moran, A., Hunt, B., & Jennings, G. (2004). A North Carolina field study to evaluate greenroof runoff quantity, runoff quality, and plant growth.
- Mueller, G. D. a. T. A. M. (2009). The Ability of Urban Residential Lawns to Disconnect Impervious Area from Municipal Sewer Systems1. *JAWRA Journal of the American Water Resources Association*, 45(5), 1116--1126. doi: 10.1111/j.1752-1688.2009.00347.x
- Myers, B., Beecham, S., & van Leeuwen, J. A. (2011). Water quality with storage in permeable pavement basecourse. *Proceedings of the ICE-Water Management*, 164(7), 361-372.
- NCDNRCM (North Carolina Department of Natural Resources and Community Development). 1983. *Nationwide Urban Runoff Program, Winston-Salem, NC: An evaluation of street sweeping as a runoff pollution control*. NC DNRCM. 75pp.
- Nielsen, J., Lynggaard-Jensen, A., & Hasling, A. (1993). Purification efficiency of Danish biological sand

- filter systems. *Water Science & Technology*, 28(10), 89-97.
- Nnadi, E., Coupe, S., Sañudo-Fontaneda, L., & Rodriguez-Hernandez, J. (2014). An evaluation of enhanced geotextile layer in permeable pavement to improve stormwater infiltration and attenuation. *International Journal of Pavement Engineering*(ahead-of-print), 1-8.
- Orzetti, L. L. a. J. R. C. a. M. R. F. (2010). Stream Condition in Piedmont Streams with Restored Riparian Buffers in the Chesapeake Bay Watershed1. *JAWRA Journal of the American Water Resources Association*, 46(3), 473--485. doi: 10.1111/j.1752-1688.2009.00414.x
- Osmond, D. L., & Hardy, D. H. (2004). Characterization of Turf Practices in Five North Carolina Communities. *J. Environ. Qual.*, 33(2), 565-575. doi: 10.2134/jeq2004.5650
- Palla, A., Gnecco, I., Carbone, M., Garofalo, G., Lanza, L., & Piro, P. (2014). Influence of stratigraphy and slope on the drainage capacity of permeable pavements: laboratory results. *Urban Water Journal*(ahead-of-print), 1-10.
- Pan, C. a. M. L. a. S. Z. (2010). Effectiveness of grass strips in trapping suspended sediments from runoff. *Earth Surface Processes and Landforms*, 35(9), 1006-1013. doi: 10.1002/esp.1997
- Paradeis, B., Lovas, S., Aipperspach, A., Kazmierczak, A., Boche, M., He, Y., . . . DeSutter, T. (2013). Dog-park soils: Concentration and distribution of urine-borne constituents. *Urban Ecosystems*, 16(2), 351-365. doi: 10.1007/s11252-012-0264-1
- Park, D.-G., Sandoval, N., Lin, W., Kim, H., & Cho, Y.-H. (2014). A case study: Evaluation of water storage capacity in permeable block pavement. *KSCE Journal of Civil Engineering*, 18(2), 514-520.
- Paré, K., Chantigny, M. H., Carey, K., Johnston, W. J., & Dionne, J. (2006). Nitrogen Uptake and Leaching under Annual Bluegrass Ecotypes and Bentgrass Species. *Crop Sci.*, 46(2), 847-853. doi: 10.2135/cropsci2005.07.0200
- Passeport, E., Hunt, W. F., Line, D. E., Smith, R. A., & Brown, R. A. (2009). Field study of the ability of two grassed bioretention cells to reduce storm-water runoff pollution. *Journal of Irrigation and Drainage Engineering*, 135(4), 505-510.
- Paus, K. H., Morgan, J., Gulliver, J. S., Leiknes, T., & Hozalski, R. M. (2014). Assessment of the hydraulic and toxic metal removal capacities of Bioretention cells after 2 to 8 years of service. *Water, Air, & Soil Pollution*, 225(1), 1-12.
- Pezzaniti, D., Beecham, S., & Kandasamy, J. (2009). Influence of clogging on the effective life of permeable pavements. *Proceedings of the ICE-Water Management*, 162(3), 211-220.
- Pitt, R., Chen, S.-E., Clark, S. E., Swenson, J., & Ong, C. K. (2008). Compaction's impacts on urban storm-water infiltration. *Journal of Irrigation and Drainage Engineering*, 134(5), 652-658.
- Pitt, R., Clark, S., & Field, R. (1999). Groundwater contamination potential from stormwater infiltration practices. *Urban water*, 1(3), 217-236.
- Pitt, R., Field, R., & Edison, N. (2004a). *Catchbasins and Inserts for the Control of Gross Solids and Conventional Stormwater Pollutants*. Paper presented at the ASCE World Water and Environmental Resources Congress, Salt Lake City, Utah.
- Pitt, R., Field, R., & Edison, N. (2004b). *Catchbasins and Inserts for the Control of Gross Solids and Conventional Stormwater Pollutants*. Paper presented at the ASCE World Water and Environmental Resources Congress, Salt Lake City, Utah.
- Pitt, R., Lantrip, J., & O'Connor, T. P. (2000). Infiltration through disturbed urban soils. *Applied Modeling of Urban Water Systems*.(8), 1-22.
- Pitt, R., Parmer, R. P. S. C. K., Clark, S. E., & Parmer, K. (1994). *Potential groundwater contamination from intentional and nonintentional stormwater infiltration* (Vol. 600): Diane Publishing.
- Pitt, R. E. (1996). *Groundwater contamination from stormwater infiltration*: CRC Press.
- Qi, X. L. Z. (2002). Experimental Study on Artificial Wetland for Controlling Stormwater Runoff Pollution [J]. *Shanghai Environmental Sciences*, 5, 002.
- Plumb, M.. (2008). *Sustainable raindrops: Cleaning the New York Harbor by greening the urban landscape*.
- Quiroga-Garza, H. M., Picchioni, G. A., & Remmenga, M. D. (2001). Bermudagrass Fertilized with Slow-Release Nitrogen Sources. I. Nitrogen Uptake and Potential Leaching Losses. *J. Environ. Qual.*, 30(2), 440-448. doi: 10.2134/jeq2001.302440x
- Raciti, S. M., Burgin, A. J., Groffman, P. M., Lewis, D. N., & Fahey, T. J. (2011). Denitrification in

- Suburban Lawn Soils. *J. Environ. Qual.*, 40(6), 1932-1940. doi: 10.2134/jeq2011.0107
- Raciti, S. M., Groffman, P. M., & Fahey, T. J. (2008). NITROGEN RETENTION IN URBAN LAWNS AND FORESTS. *Ecological Applications*, 18(7), 1615-1626. doi: 10.1890/07-1062.1
- Read, J., Wewill, T., Fletcher, T., & Deletic, A. (2008). Variation among plant species in pollutant removal from stormwater in biofiltration systems. *Water research*, 42(4), 893-902.
- Revitt, D. M., Shutes, R., Jones, R., Forshaw, M., & Winter, B. (2004). The performances of vegetative treatment systems for highway runoff during dry and wet conditions. *Science of the total environment*, 334, 261-270.
- Richman, M. (1997). Compost media capture pollutants from storm water runoff. *Water Environment & Technology*, 9, 21-22.
- Robert Pitt, P., Engineer, D. E., Lantrip, J., Harrison, R., Henry, C. L., Xue, D., . . . Supply, W. (1999). Infiltration Through Disturbed Urban Soils and Compost-Amended Soil Effects on Runoff Quality and Quantity.
- Robert Pitt, P., Shen-En Chen, P., & Shirley Clark, P. (2002). Compacted urban soils effects on infiltration and bioretention stormwater control designs. *Bridges*, 10(40644), 14.
- Rodriguez-Hernandez, J., Castro-Fresno, D., Fernández-Barrera, A. H., & Vega-Zamanillo, Á. (2011). Characterization of infiltration capacity of permeable pavements with porous asphalt surface using cantabrian fixed infiltrometer. *Journal of Hydrologic Engineering*, 17(5), 597-603.
- Roseen, R. M., Ballesteros, T. P., Houle, J. J., Avellaneda, P., Wildey, R., & Briggs, J. (2006). Storm water low-impact development, conventional structural, and manufactured treatment strategies for parking lot runoff: Performance evaluations under varied mass loading conditions. *Transportation Research Record: Journal of the Transportation Research Board*, 1984(1), 135-147.
- Rosenquist, S. E., Hession, W. C., Eick, M. J., & Vaughan, D. H. (2011). Field Application of a Renewable Constructed Wetland Substrate for Phosphorus Removal1: Wiley Online Library.
- Roy, J., Parkin, G., & Wagner-Riddle, C. (2000). Timing of nitrate leaching from turfgrass after multiple fertilizer applications. *Water Quality Research Journal of Canada*, 35(4), 735-752.
- Rusciano, G., & Obropta, C. (2007). Bioretention column study: Fecal coliform and total suspended solids reductions. *Transactions of the ASABE*, 50(4), 1261-1269.
- Rushton, B. (2006). Broadway Outfall Stormwater Retrofit Project. Southwest Florida Water Management District, Brooksville, FL.
- Rushton, B. T. (2001). Low-impact parking lot design reduces runoff and pollutant loads. *Journal of Water Resources Planning and Management*, 127(3), 172-179.
- Salim, I., Rabbaig, M., Grazioli, M., Igwe, A., & Sherrill, J. (2002). Demonstration of downspout disconnection effectiveness. *Proceedings of the Water Environment Federation*, 2002(6), 65-76. doi: 10.2175/193864702785300674
- Sansalone, J., Kuang, X., Ying, G., & Ranieri, V. (2012). Filtration and clogging of permeable pavement loaded by urban drainage. *Water research*, 46(20), 6763-6774.
- Scholz, M., & Grabowiecki, P. (2007). Review of permeable pavement systems. *Building and Environment*, 42(11), 3830-3836.
- Scholz, M., & Grabowiecki, P. (2009). Combined permeable pavement and ground source heat pump systems to treat urban runoff. *Journal of chemical technology and biotechnology*, 84(3), 405-413.
- Schueler, T. R. (1994). Performance of grassed swales along east coast highways. *Watershed Protection Techniques*, 1(3), 122-123.
- Scott, H. E. a. M. W. D. (2005). In-channel transient storage and associated nutrient retention: Evidence from experimental manipulations. *Limnology and Oceanography*, 50, 1740--1751. doi: 10.4319/lo.2005.50.6.1740
- Selbig, W. R., & Balster, N. (2010). *Evaluation of Turf-grass and Prairie-Vegetated Rain Gardens in a Clay and Sand Soil, Madison, Wisconsin, Water Years 2004-08*: US Department of the Interior, US Geological Survey.
- Selbig, W. R., & Bannerman, R. T. (2007). Evaluation of street sweeping as a stormwater-quality-management tool in three residential basins in Madison, Wisconsin. U.S. Geological Survey Scientific Investigations Report 2007-5156, 115pp.
- Shaver, E., & Baldwin, R. (1991). Sand filter design for water quality treatment.
- Shuman, L. M. (2002). Phosphorus and Nitrate Nitrogen in Runoff Following Fertilizer Application to

- Turfgrass. *J. Environ. Qual.*, 31(5), 1710-1715. doi: 10.2134/jeq2002.1710
- Simpson, T., & Weammert, S. (2009). Developing nitrogen, phosphorus and sediment reduction efficiencies for Tributary Strategies practices. BMP Assessment: Final Report. University of Maryland, Mid-Atlantic Water Program.
- Siriwardene, N., Deletic, A., & Fletcher, T. (2007). Clogging of stormwater gravel infiltration systems and filters: Insights from a laboratory study. *Water research*, 41(7), 1433-1440.
- Speiran, G. K. (2012). Several Characteristics to Consider for Mapping to Target Placement of Effective Riparian Forest Buffers for Water Quality Improvement. Presentation to the Forestry Work Group, US EPA Chesapeake Bay Program. USGS.
- Soldat, D. J., & Petrovic, A. M. (2008). The Fate and Transport of Phosphorus in Turfgrass Ecosystems. *Crop Sci.*, 48(6), 2051-2065. doi: 10.2135/cropsci2008.03.0134
- Sorenson, J. R. (2013). Potential reductions of street solids and phosphorus in urban watersheds from street cleaning, Cambridge, Massachusetts, 2009-2011. U.S. Geological Survey Scientific Investigations Report 2012-5292, 66 p.,
- Spence, P. L., Osmond, D. L., Childres, W. Heitman, J.L & Robarge, W. P. (2012). Effects of Lawn Maintenance on Nutrient Losses Via Overland Flow During Natural Rainfall Events1. *JAWRA*, 48(5), 909--924. doi: 10.1111/j.1752-1688.2012.00658.x
- Spieles, D. J., & Mitsch, W. J. (1999). The effects of season and hydrologic and chemical loading on nitrate retention in constructed wetlands: a comparison of low-and high-nutrient riverine systems. *Ecological Engineering*, 14(1), 77-91.
- Stack, B., Law, N. L. Drescher, S. R. (2013). *Gross Solids Characterization Study in the Tred Avon Watershed, Talbot County, MD*. Center for Watershed Protection, Ellicott City, MD.
- Stagge, J. H., Davis, A. P., Jamil, E., & Kim, H. (2012). Performance of grass swales for improving water quality from highway runoff. *Water research*, 46(20), 6731-6742.
- Stander, E. K., & Borst, M. (2009). Hydraulic test of a bioretention media carbon amendment. *Journal of Hydrologic Engineering*, 15(6), 531-536.
- Stanford, R., & Yu, S. (2007). Field Evaluation of a Stormwater Bioretention Filtration System *World Environmental and Water Resources Congress 2007* (pp. 1-10): American Society of Civil Engineers.
- Stanturf, John A., ed. (2010). Proceedings of the 14th biennial southern silvicultural research conference. Gen. Tech. Rep. SRS-121. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 614 p.
- Stewart, W. (1992). Compost Stormwater Treatment System. *W&H Pacific Consultants. Draft Report. Portland, OR*.
- Strecker, E. W., Quigley, M. M., Ben Urbonas, P., & Jones, J. (2004). Analyses of the expanded EPA/ASCE international BMP database and potential implications for BMP design. *Bridges*, 10(40737), 34.
- Strecker, E. W., Quigley, M. M., Urbonas, B. R., Jones, J. E., & Clary, J. K. (2001). Determining urban storm water BMP effectiveness. *Journal of Water Resources Planning and Management*, 127(3), 144-149.
- Sudduth, E. B., Hassett, B. A., Cada, P., & Bernhardt, E. S. (2011). Testing the Field of Dreams Hypothesis: functional responses to urbanization and restoration in stream ecosystems. *Ecological Applications*, 21(6), 1972-1988. doi: 10.1890/10-0653.1
- Sun, X., & Davis, A. P. (2007). Heavy metal fates in laboratory bioretention systems. *Chemosphere*, 66(9), 1601-1609.
- Sweeney, B. W. a. N. J. D. (2014). Streamside Forest Buffer Width Needed to Protect Stream Water Quality, Habitat, and Organisms: A Literature Review. *JAWRA*, 50(3), 560--584. doi: 10.1111/jawr.12203
- Tilak, A. S., Burchell, M. R., Youssef, M. A., Lowrance, R., and Williams, R. G. Williams. ( 2014). Field Testing the Riparian Ecosystem Management Model on a Riparian Buffer in the North Carolina Upper Coastal Plain. *Journal of the American Water Resources Association* , 50(3): 665-682. DOI: 10.1111/jawr.12208
- Tyagi, N. (2010). *Pilot scale study on pressure filtration system for evaluation of filtralite filter media*. Thapar University.

- Urbonas, B. (1994). Assessment of stormwater BMPs and their technology. *Water Science & Technology*, 29(1-2), 347-353.
- Using geographic information systems and regression analysis to evaluate relationships between land use and fecal coliform bacterial pollution. (2004). *Journal of Experimental Marine Biology and Ecology*, 298(2), 197 - 209. doi://dx.doi.org/10.1016/S0022-0981(03)00359-9
- Van Duin, B., Brown, C., Chu, A., Marsalek, J., & Valeo, C. (2008). *Characterization of long-term solids removal and clogging processes in two types of permeable pavement under cold climate conditions*. Paper presented at the 11th International Conference on Urban Drainage.
- Van Seters, T., Smith, D., & MacMillan, G. (2006). *Performance evaluation of permeable pavement and a bioretention swale*. Paper presented at the Proceedings 8th International Conference on Concrete Block Paving.
- Vehicle-based road dust emission measurement—Part II: Effect of precipitation, wintertime road sanding, and street sweepers on inferred \ PM10\ emission potentials from paved and unpaved roads. (2003). *Atmospheric Environment*, 37(32), 4573 - 4582. doi://dx.doi.org/10.1016/S1352-2310(03)00529-6
- Vollertsen, J., K. H. Lange, J. Pedersen, P. Hallager, A. Bruus, A. Laustsen, V. W. Bundesen, H. Brix, A. H. Nielsen, N. H. Nielsen, T. Wium-Andersen and T. Hvítved-Jacobsen . (2009). Monitoring the startup of a wet detention pond equipped with sand filters and sorption filters. *Water Science and Technology*, 60(4), 1071.
- Wadzuk, B. M., Rea, M., Woodruff, G., Flynn, K., & Traver, R. G. (2010). Water-Quality Performance of a Constructed Stormwater Wetland for All Flow Conditions1. *JAWRA Journal of the American Water Resources Association*, 46(2), 385-394.
- Wang, C.-Y., & Sample, D. J. (2014). Assessment of the nutrient removal effectiveness of floating treatment wetlands applied to urban retention ponds. *Journal of environmental management*, 137, 23-35.
- Wang, J. a. E. T. A. a. N. D. J. (2008). Mechanistic Simulation of Tree Effects in an Urban Water Balance Model1. *JAWRA Journal of the American Water Resources Association*, 44(1), 75--85. doi: 10.1111/j.1752-1688.2007.00139.x
- Wardynski, B. J., Winston, R. J., & Hunt, W. F. (2012). Internal water storage enhances exfiltration and thermal load reduction from permeable pavement in the North Carolina mountains. *Journal of Environmental Engineering*, 139(2), 187-195.
- Warnaars, E., Larsen, A. V., Jacobsen, P., & Mikkelsen, P. S. (1999). Hydrologic behaviour of stormwater infiltration trenches in a central urban area during 2 $\frac{3}{4}$  years of operation. *Water science and technology*, 39(2), 217-224.
- Waschbusch, R. J. W. D. o. T. G. S. (2003). Data and methods of a 1999-2000 street sweeping study on an urban freeway in Milwaukee County, Wisconsin. U.S. Geological Survey Open-File Report 03-93, 41 p.
- Water quality and restoration in a coastal subdivision stormwater pond. (2008). *Journal of Environmental Management*, 88(1), 43 - 52. doi://dx.doi.org/10.1016/j.jenvman.2007.01.025
- Wayne, C. H. a. L. C. Modeling Non-Directly Connected Impervious Areas in Dense Neighborhoods. 1-12. doi: 10.1061/40644(2002)21
- Weller, D. E., Baker, M. E., & Jordan, T. E. (2010). Effects of riparian buffers on nitrate concentrations in watershed discharges: new models and management implications. *Ecological Applications*, 21(5), 1679-1695. doi: 10.1890/10-0789.1
- White, S. A., & Cousins, M. M. (2013). Floating treatment wetland aided remediation of nitrogen and phosphorus from simulated stormwater runoff. *Ecological Engineering*, 61, 207-215.
- Winston, R., Hunt, W., Kennedy, S., Wright, J., and Lauffer, M.. (2012). Field Evaluation of Storm-Water Control Measures for Highway Runoff Treatment. *Journal of Environmental Engineering*, 138(1), 101-111. doi: 10.1061/(ASCE)EE.1943-7870.0000454
- Winston, R., Hunt, W., III, Osmond, D., Lord, W., and Woodward, M. (2011). Field Evaluation of Four Level Spreader-Vegetative Filter Strips to Improve Urban Storm-Water Quality. *Journal of Irrigation and Drainage Engineering*, 137(3), 170-182. doi: 10.1061/(ASCE)IR.1943-4774.0000173
- Winston, R. J., Hunt, W. F., Kennedy, S. G., Merriman, L. S., Chandler, J., & Brown, D. (2013). Evaluation

- of floating treatment wetlands as retrofits to existing stormwater retention ponds. *Ecological Engineering*, 54, 254-265.
- Winston, R. J., Hunt, W. F., Kennedy, S. G., Wright, J. D., & Lauffer, M. S. (2011). Field evaluation of storm-water control measures for highway runoff treatment. *Journal of Environmental Engineering*, 138(1), 101-111.
- Wong, T. H. (2006). An Overview of Water Sensitive Urban Design Practices in Australia t. *Water Practice & Technology*, 1(01).
- Xiao, H.-W., Zhai, J., Deng, R.-S., Wang, T., Lu, G.-B., Jin, L., & Yao, C.-X. (2008). Performance of Constructed Wetland for Treatment of Stormwater Runoff in Eco-residential Area [J]. *China Water & Wastewater*, 11, 012.
- Yan, W. S. W. W. Y. (2003). Influence of hydraulic condition on treatment effect of constructed wetland [J]. *Journal of Southeast University (Natural Science Edition)*, 3, 027.
- Yang, D., Xu, L.-H., & Zhou, Q. (2002). Application of Subsurface Flow Cons tructed Wetlands in Controlling Storm Runoff Pollution [J]. *Agro-environmental Protection*, 4, 013.
- Yates, C. R. (2008). *Comparison of two constructed wetland substrates for reducing phosphorus and nitrogen pollution in agricultural runoff*. McGill University.
- Yu, S., Kaighn, R., & Liao, S. (1994). Testing of Best Management Practices for Controlling Highway Runoff, Phase II. Virginia Department of Transportation: Report No. FHWA/VA-94-R21.
- Yu, S. L., Kuo, J.-T., Fassman, E. A., & Pan, H. (2001). Field test of grassed-swale performance in removing runoff pollution. *Journal of Water Resources Planning and Management*, 127(3), 168-171.
- Zachary Bean, E., Frederick Hunt, W., & Alan Bidelsbach, D. (2007). Evaluation of four permeable pavement sites in eastern North Carolina for runoff reduction and water quality impacts. *Journal of Irrigation and Drainage Engineering*, 133(6), 583-592.
- Zarriello, P.J., Breault B.R., & Weiskel, P. K. (2002). Potential Effects of Structural Controls and Street Sweeping on Stormwater Loads to the Lower Charles River, Massachusetts. USGS. Water-Resources Investigations Report 02-4220
- Zhao, F., Xi, S., Yang, X., Yang, W., Li, J., Gu, B., & He, Z. (2012). Purifying eutrophic river waters with integrated floating island systems. *Ecological Engineering*, 40, 53-60.
- Zhao, G.-y., QIN, Q., & ZHOU, Q. (2006). Phosphorus Adsorption by Some Substrates in Constructed Wetland System [J]. *Environmental science & technology*, 6, 032.
- Zhou, W., Beck, B. F., & Green, T. S. (2003). Evaluation of a peat filtration system for treating highway runoff in a karst setting. *Environmental Geology*, 44(2), 187-202.

## Agricultural

- Agouridis, C. T., R., W. S., C., W. R., & D., J. G. (2005). Livestock Grazing Management Impacts on Stream Water Quality: a Review1. *JAWRA*, 41(3), 591--606. doi: 10.1111/j.1752-1688.2005.tb03757.x
- Arabi, M., Baffaut, C., Sadler, E. J., Anderson, S. H., Broz, R. R., Meals, D. W., . . . Osmond, D. L. (2012). Goodwater Creek Watershed, Missouri: National Institute of Food and Agriculture-Conservation Effects Assessment Project. In D. L. Osmond, D. W. Meals, D. L. Hoag, & M. Arabi (Eds.), *How to Build Better Agricultural Conservation Programs to Protect Water Quality: The National Institute of Food and Agriculture-Conservation Effects Assessment Project Experience*. Ankeny, Iowa: Soil and Water Conservation Society.
- Beaulac, M. N., & Reckhow, K. H. (1982). An examination of land use-nutrient export relationships1. *JAWRA*, 18(6), 1013-1024.
- Butler, D. M., Ranells, N. N., Franklin, D. H., Poore, M. H., & Green Jr, J. T. (2008). Runoff water quality from manured riparian grasslands with contrasting drainage and simulated grazing pressure. *Agriculture, ecosystems & environment*, 126(3), 250-260.
- Christianson, L., Bhandari, A., & Helmers, M. (2009). Emerging technology: denitrification bioreactors for nitrate reduction in agricultural waters. *Journal of soil and water conservation*, 64(5), 139A-141A.
- Christianson, L., Castello, A., Christianson, R., Bhandari, A., & Helmers, M. (2010). Hydraulic Property Determination of Denitrifying Bioreactor Fill Media. *Applied Engineering in Agriculture*, 26(5), 849-

854.

- Christianson, L., Christianson, R., Helmers, M., Pederson, C., & Bhandari, A. (2013). Modeling and Calibration of Drainage Denitrification Bioreactor Design Criteria. *Journal of Irrigation and Drainage Engineering*, 139(9), 699-709.
- Christianson, L., Knoot, T., Larsen, D., Tyndall, J., & Helmers, M. (2013). Adoption potential of nitrate mitigation practices: an ecosystem services approach. *International Journal of Agricultural Sustainability*(ahead-of-print), 1-18.
- Christianson, L. E., Bhandari, A., & Helmers, M. J. (2011). Pilot-scale evaluation of denitrification drainage bioreactors: Reactor geometry and performance. *Journal of Environmental Engineering*, 137(4), 213-220.
- Christianson, L. E., Bhandari, A., & Helmers, M. J. (2012). A practice-oriented review of woodchip bioreactors for subsurface agricultural drainage. *Applied engineering in agriculture*, 28(6), 861.
- Christianson, L. E., Bhandari, A., Helmers, M. J., Kult, K. J., Sutphin, T., & Wolf, R. (2012). Performance evaluation of four field-scale agricultural drainage denitrification bioreactors in Iowa. *Transactions of the ASABE*, 55(6), 2163.
- Christianson, L. E., Hanly, J. A., & Hedley, M. J. (2011). Optimized denitrification bioreactor treatment through simulated drainage containment. *Agricultural Water Management*, 99(1), 85-92.
- Copeland, C. (2010). Animal waste and water quality: EPA regulation of concentrated animal feeding operations (CAFOs): Congressional Research Service, Library of Congress.
- Coverdale, B., Sylvester, P., Meisinger, J., McGrath, J., Staver, K., Powell, R., . . . Giese, E. (2013). High Residue, Minimum Soil Disturbance: definition and recommended sediment and nutrient reduction effectiveness estimates.
- Crumpton, W. (2014). Wetland performance | Iowa Conservation Reserve Enhancement Program. from <http://www.iowacrep.org/reports/wetland-performance>
- Edwards, D., Larson, B., & Lim, T. (2000). Runoff nutrient and fecal coliform content from cattle manure application to fescue plots1: Wiley Online Library.
- Franz, B., Swinker, A., & Foulk, D. (Producer). (2010, June 11, 2014). BMPs and Environmental Stewardship on Equine Operation. Retrieved from <http://extension.psu.edu/aec/webinars-presentations/manure-du-jour/nutrient-management-treatment-technologies/bmps-and-environmental-stewardship-on-equine-operation>
- GSWCD. (2009). North Carolina Agriculture Cost Share Program (Vol. NC-ACSP BMP's). Greensboro, NC: Guliford Soil and Water Conservation District and Natural Resources Conservation Service.
- Haga, K. (1999). Development of composting technology in animal waste treatment. *Asian-Australas J Anim Sci*, 12, 604-606.
- Hammer, D. A. (1992). Designing constructed wetlands systems to treat agricultural nonpoint source pollution. *Ecological Engineering*, 1(1), 49-82.
- Harada, Y., Haga, K., Osada, T., & Koshino, M. (1993). Quality of compost produced from animal wastes. *Japan Agricultural Research Quarterly*, 26, 238-238.
- Higgins, M., Rock, C., Bouchard, R., & Wengrezynek, B. (1993). Controlling agricultural runoff by use of constructed wetlands. *Constructed wetlands for water quality improvement*. CRC Press, Boca Raton, 359-367.
- Hubbard, R., Newton, G., & Hill, G. (2004). Water quality and the grazing animal. *Journal of animal science*, 82(13 suppl), E255-E263.
- Imbeah, M. (1998). Composting piggery waste: a review. *Bioresource Technology*, 63(3), 197-203.
- Johnson, S. R., Evans, R. O. , Osmond, D. L. and Gilliam, L. W. ( 2013). Riparian buffer located in an upland landscape position does not enhance nitrate-nitrogen removal. *Ecological Engineering*, 52:252 - 261.
- Kirchmann, H. (1994). Animal and municipal organic wastes and water quality. In R. Lal & B. A. Stewart (Eds.), *Soil processes and water quality: advances in soil science* (pp. 163-232). Boca Raton: Lewis Publishers.
- Klopfenstein, T. J., & Erickson, G. E. (2002). Effects of manipulating protein and phosphorus nutrition of feedlot cattle on nutrient management and the environment. *Faculty Papers and Publications in Animal Science*, 473.
- Knowlton, K., Radcliffe, J., Novak, C., & Emmerson, D. (2004). Animal management to reduce

- phosphorus losses to the environment. *Journal of Animal Science*, 82(13 suppl), E173-E195.
- Line, D. (2003). Changes in a stream's physical and biological conditions following livestock exclusion. *Transactions of the ASAE*, 46(2), 287-293.
- Line, D., & Osmond, D. (2014). Lake Jordan Paired Watershed Study; Part II: NC DENR.
- Line, D. E., Harman, W. A., Jennings, G. D., Thompson, E. J., & Osmond, D. L. (2000). Nonpoint-Source Pollutant Load Reductions Associated with Livestock Exclusion. *J. Environ. Qual.*, 29(6), 1882-1890. doi: 10.2134/jeq2000.00472425002900060022x
- Mahan, D., & Howes, D. (1995). *Environmental aspects with particular emphasis on phosphorus, selenium, and chromium in livestock feed*. Paper presented at the 13th Annual Pacific Northwest Animal Nutrition Conf., Portland, OR.
- Meals, D. (2001). Water quality response to riparian restoration in an agricultural watershed in Vermont, USA. *Water Science & Technology*, 43(5), 175-182.
- Meals, D. W., Dressing, S. A., & Davenport, T. E. (2010). Lag time in water quality response to best management practices: A review. *Journal of Environmental Quality*, 39(1), 85-96.
- Meisinger, J., Hargrove, W., Mikkelsen, R., Williams, J., & Benson, V. (1991). Effects of cover crops on groundwater quality. *Cover Crops for Clean Water*. Soil and Water Conservation Society. Ankeny, Iowa, 266, 793-799.
- Messer, T.L., Burchell M.R., Grabow, G.L.,and Osmond, D.L. (2012). Groundwater nitrate reductions within upstream and downstream sections of a riparian buffer. *Ecological Engineering*, 47:297-307.
- Mosley, J. C., Cook, P. S., Griffis, A. J., & O'Laughlin, J. (1997). *Guidelines for managing cattle grazing in riparian areas to protect water quality: Review of research and best management practices policy*. Idaho Forest, Wildlife and Range Experiment Station, University of Idaho.
- NCDENR. (2009). *NCDENR Stormwater BMP Manual: Wet Detention Basin (Chapter 10)*. Retrieved from [http://portal.ncdenr.org/c/document\\_library/get\\_file?uuid=ba49404a-b76e-4ed4-bf09-80a12ab39a29&groupId=38364](http://portal.ncdenr.org/c/document_library/get_file?uuid=ba49404a-b76e-4ed4-bf09-80a12ab39a29&groupId=38364).
- Novotny, V. (2003). *Water Quality Diffuse Pollution and Watershed Management* (2nd ed.). New York, NY: John Wiley & Sons, Inc.
- NRCS. (2006). Nutrient Management (Vol. Code 590): Natural Resources Conservation Service.
- NRCS. (2010a). Constructed Wetland (Vol. Code 656): Natural Resources Conservation Service.
- NRCS. (2010b). Prescribed Grazing (Vol. Code 528): Natural Resources Conservation Service.
- NRCS. (2011a). Cover Crop (Vol. Code 340): Natural Resources Conservation Service.
- NRCS. (2011b). Pond (Vol. Code 378): Natural Resources Conservation Service.
- NRCS-NC. (2004). Composting Facility (Vol. Code 317): Natural Resources Conservation Service - North Carolina.
- NRCS-NC. (2012). Grazing Management Plan (Vol. Code 110): Natural Resources Conservation Service - North Carolina.
- NRCS-NC. (2013). Feed Management Plan (Vol. Code 108): Natural Resources Conservation Service - North Carolina.
- Ockenden, M. C., Deasy, C., Quinton, J. N., Bailey, A. P., Surridge, B., & Stoate, C. (2012). Evaluation of field wetlands for mitigation of diffuse pollution from agriculture: Sediment retention, cost and effectiveness. *Environmental Science & Policy*, 24, 110-119.
- Osmond, D. L., Gassman, P., Schilling, K., Wolter, C., Kling, C. L., Helmers, M., . . . Arabi, M. (2012). Walnut Creek and Squaw Creek Watersheds, Iowa: National Institute of Food and Agriculture-Conservation Effects Assessment Project. In D. L. Osmond, D. W. Meals, D. L. Hoag, & M. Arabi (Eds.), *How to Build Better Agricultural Conservation Programs to Protect Water Quality: The National Institute of Food and Agriculture-Conservation Effects Assessment Project Experience*. Ankeny, Iowa: Soil and Water Conservation Society.
- Osmond, D. L., & Neas, K. (2011). Delineating Agriculture in the Neuse River Basin: NC State University; USDA.
- Owens, L., Edwards, W., & Van Keuren, R. (1996). Sediment losses from a pastured watershed before and after stream fencing. *Journal of Soil and Water Conservation*, 51(1), 90-94.
- Pionke, H. B., Gburek, W. J., & Sharpley, A. N. (2000). Critical source area controls on water quality in an agricultural watershed located in the Chesapeake Basin. *Ecological Engineering*, 14(4), 325-335.

- Ranganath, S., Hession, W., & Wynn, T. (2009). Livestock exclusion influences on riparian vegetation, channel morphology, and benthic macroinvertebrate assemblages. *Journal of soil and water conservation*, 64(1), 33-42.
- Schepers, J., & Francis, D. (1982). Chemical water quality of runoff from grazing land in Nebraska: I. Influence of grazing livestock. *Journal of Environmental Quality*, 11(3), 351-354.
- Sharpley, A., Meisinger, J., Breeuwsma, A., Sims, J., Daniel, T., & Schepers, J. (1998). Impacts of animal manure management on ground and surface water quality. In J. L. Hatfield & B. A. Stewart (Eds.), *Animal waste utilization: effective use of manure as a soil resource* (pp. 173-242): Lewis Publishers.
- Sheffield, R. E., Mostaghimi, S., Vaughan, D., Collins Jr, E., & Allen, V. (1997). Off-stream water sources for grazing cattle as a stream bank stabilization and water quality BMP. *Transactions of the ASAE*, 40(3), 595-604.
- Shober, A. L., & Sims, J. T. (2003). Phosphorus Restrictions for Land Application of Biosolids Paper no. 03-01-1737 in the journal series of the Delaware Agricultural Experiment Station. *J. Environ. Qual.*, 32(6), 1955-1964. doi: 10.2134/jeq2003.1955
- Shober, A. L., Stehouwer, R. C., & Macneal, K. E. (2003). On-Farm Assessment of Biosolids Effects on Soil and Crop Tissue Quality. *J. Environ. Qual.*, 32(5), 1873-1880. doi: 10.2134/jeq2003.1873
- Simpson, T., & Weammert, S. (2009). Developing nitrogen, phosphorus and sediment reduction efficiencies for Tributary Strategies practices. BMP Assessment: Final Report. University of Maryland, Mid-Atlantic Water Program.
- Stout, W., Fales, S., Muller, L., Schnabel, R., & Weaver, S. (2000). Water quality implications of nitrate leaching from intensively grazed pasture swards in the northeast US. *Agriculture, ecosystems & environment*, 77(3), 203-210.
- Tetra-Tech. (2008). Little Wabash River I Watershed TMDL Implementation Plan.
- USEPA. (2003). National Management Measures to Control Nonpoint Source Pollution from Agriculture: USEPA.
- Tilak, A. S., Burchell, M. R., Youssef, M. A., Lowrance, R., and Williams, R. G. Williams. ( 2014). Field Testing the Riparian Ecosystem Management Model on a Riparian Buffer in the North Carolina Upper Coastal Plain. *Journal of the American Water Resources Association* , 50(3): 665-682. DOI: 10.1111/jawr.12208
- Vidon, P., Campbell, M. A., & Gray, M. (2008). Unrestricted cattle access to streams and water quality in till landscape of the Midwest. *agricultural water management*, 95(3), 322-330.
- Wadman, W., Sluijsmans, C., & Cremer, L. D. L. L. (1987). *Value of animal manures: changes in perception*: Springer.
- Wortmann, C., Helmers, M. J., Mallarino, A. P., Barden, C., Devlin, D., Pierzynski, G., . . . Shapiro, C. (2005). Agricultural phosphorus management and water quality protection in the Midwest.

## Wastewater

- Dayton, E. A., Basta, N. T., Jakober, C. A., & Hattey, J. A. (2003). Using treatment residuals to reduce phosphorus in agricultural runoff. *Journal American Water Works Association*, 151-158.
- Long, L. M., Schipper, L. A., & Bruesewitz, D. A. (2011). Long-term nitrate removal in a denitrification wall. *Agriculture, ecosystems & environment*, 140(3), 514-520.
- Lilly, L., Stack, B.P., Schueler, T.R. and Lane, C. 2014. DRAFT Chesapeake Bay Program Expert Panel Report on Removal Rates for the Elimination of Discovered Nutrient Discharges from Grey Infrastructure.
- Penn, C. J., & Sims, J. T. (2002). Phosphorus forms in biosolids-amended soils and losses in runoff. *Journal of Environmental Quality*, 31(4), 1349-1361.
- Robertson, W., Blowes, D., Ptacek, C., & Cherry, J. (2000). Long-term performance of in situ reactive barriers for nitrate remediation. *Groundwater*, 38(5), 689-695.
- Robertson, W., & Cherry, J. (1995). In situ denitrification of septic-system nitrate using reactive porous media barriers: field trials. *Groundwater*, 33(1), 99-111.
- Robertson, W., Vogan, J., & Lombardo, P. (2008). Nitrate Removal Rates in a 15-Year-Old Permeable Reactive Barrier Treating Septic System Nitrate. *Groundwater Monitoring & Remediation*, 28(3),

65-72.

- Schipper, L., & Vojvodić-Vuković, M. (1998). Nitrate removal from groundwater using a denitrification wall amended with sawdust: field trial. *Journal of Environmental Quality*, 27(3), 664-668.
- Schipper, L. A., Barkle, G. F., & Vojvodic-Vukovic, M. (2005). Maximum rates of nitrate removal in a denitrification wall. *Journal of Environmental Quality*, 34(4), 1270-1276.
- Schipper, L. A., & Vojvodić-Vuković, M. (2000). Nitrate removal from groundwater and denitrification rates in a porous treatment wall amended with sawdust. *Ecological Engineering*, 14(3), 269-278.
- Schipper, L. A., & Vojvodić-Vuković, M. (2001). Five years of nitrate removal, denitrification and carbon dynamics in a denitrification wall. *Water Research*, 35(14), 3473-3477.
- Schmidt, C. A., & Clark, M. W. (2012a). Efficacy of a denitrification wall to treat continuously high nitrate loads. *Ecological Engineering*, 42, 203-211.
- Schmidt, C. A., & Clark, M. W. (2012b). Evaluation of a denitrification wall to reduce surface water nitrogen loads. *Journal of environmental quality*, 41(3), 724-731.
- Simpson, T., & Weamert, S. (2009). Developing nitrogen, phosphorus and sediment reduction efficiencies for Tributary Strategies practices. BMP Assessment: Final Report. University of Maryland, Mid-Atlantic Water Program.
- Su, J., Wang, H., Kimberley, M. O., Beecroft, K., Magesan, G. N., & Hu, C. (2007). Fractionation and mobility of phosphorus in a sandy forest soil amended with biosolids. *Environmental Science and Pollution Research-International*, 14(7), 529-535.
- Sui, Y., & Thompson, M. L. (2000). Phosphorus sorption, desorption, and buffering capacity in a biosolids-amended mollisol. *Soil Science Society of America Journal*, 64(1), 164-169.
- Wang, H., Brown, S. L., Magesan, G. N., Slade, A. H., Quintern, M., Clinton, P. W., & Payn, T. W. (2008). Technological options for the management of biosolids. *Environmental Science and Pollution Research-International*, 15(4), 308-317.