

**PUBLICATIONS AND SCIENTIFIC PRESENTATIONS** (Note: “\*” denotes graduate student was the lead author, and 2<sup>nd</sup> author was principle advisor/senior author.)

**Refereed Journal Articles (3)**

**Burchell, M.R.**, R.W. Skaggs, C.R. Lee, S. Broome, G.M. Chescheir, and J. Osborne. 2007. Substrate organic matter to improve nitrate removal in surface flow constructed wetlands. *Journal of Environmental Quality*. 36(1):194-207.

Evans, R.O., K.L. Bass, **M.R. Burchell**, R.D. Hinson, R. Johnson, and M. Doxey. 2007. Management alternatives to enhance water quality and ecological function of channelized streams and drainage canals. *Journal of Soil and Water Conservation* 62(4):308-320.

**Burchell, M.R.**, R.W. Skaggs, G.M. Chescheir, J.W. Gilliam, and L.A. Arnold. 2005. Shallow subsurface drains to reduce nitrate losses from drained agricultural lands. *Transactions of the ASAE*. 48(3):1079-1089.

**Extension Publications (1)**

Hunt III, W.F., **M. R. Burchell**, J.D. Wright, and K.L. Bass. 2007. “Stormwater Wetland Design Update”. North Carolina Cooperative Extension Publication AGW-588-12.

**Non-refereed Conference Proceedings (16)**

**Burchell, M.R.**, R.O. Evans, K.L. Bass, S.W. Broome, J.D. Wright, and J.A. Lindgren. 2008. Restoration of a prior converted farm in eastern NC with multiple target wetland communities. ASABE publication #701P0208cd. ASABE - 21<sup>st</sup> Century Watershed Technology: Improving Water Quality and Environment. Concepcion, Chile. March 31-April 3.

**Burchell, M.R.**, W.F. Hunt III, and G.M. Chescheir. 2008. Reducing stormwater bacteria loads to North Carolina ocean recreational areas using a dune infiltration system. EWRI-ASCE World Environmental and Water Resources Congress, Honolulu, HI. May 12-16.  
Bass, K.L., R.O. Evans, and **M.R. Burchell**. Comparing design methods for restoring small streams in NC’s coastal plain. 2007. Proceedings of the ASCE-EWRI World Environment and Water Resources Congress. Karen C. Kobbes - Editor. May 15-19, Tampa FL.

**Burchell, M.R.**, D. Line, W.F. Hunt III, and J. Wright. 2007. Conversion of a drainage ditch to constructed wetlands to treat stormwater runoff. Proceedings of the ASCE-EWRI World Environment and Water Resources Congress. Karen C. Kobbes - Editor. May 15-19, Tampa FL.

**Burchell, M.R.**, R.W. Skaggs, R.O. Evans, C.R. Lee, and S.W. Broome. 2007. Addition of organic matter to agricultural ditch soils to be used as constructed wetlands for nitrate treatment. Proceedings of the ASCE-EWRI World Environment and Water Resources Congress. Karen C. Kobbes - Editor. May 15-19, Tampa FL.

\*Johnson, S.R., **M.R. Burchell**, R.O. Evans, D.L. Osmond, W. Gilliam. 2007. Implications of establishing a pine conservation buffer upslope of an established buffer on nitrate reduction. ASABE Paper No. 072226. ASABE-AIM Minneapolis, MN June 17-20.

\*Lindgren, J.A., R.O. Evans, S.W. Broome, **M.R. Burchell**, and K.L. Bass. 2007. Elevation and salinity effects on vegetation in a created tidal marsh in eastern North Carolina. ASABE Paper No. 077097 ASABE-AIM Minneapolis, MN June 17-20.

Wright, J.D., W.F. Hunt, **M.R. Burchell II**, C.R. Perrin. 2007. Implementing stormwater best management practice retrofits in Wilmington, N.C. ASABE Paper No. 077087 ASABE-AIM Minneapolis, MN June 17-20.

\*Bright, T.M., **M.R. Burchell II**, W.F. Hunt III. 2006. Stormwater dune infiltration system for reducing pollutant loads from ocean outfalls. Paper number 062308 ASABE International Meeting, Portland, OR. July 9-12.

\*Hyatt, D., **M.R. Burchell**, G. Grabow, D. Line, R. Evans, D. Osmond, and W. Gilliam. 2006. Nitrate removal of riparian buffers established through the N.C. Conservation Enhancement Program. Paper number 062182 ASABE International Meeting, Portland, OR. July 9-12.

Wright, J.D., T.M Bright, W.F Hunt III, and **M.R Burchell**. 2006. Innovative Stormwater Retrofits for Barrier Island Applications. StormCon National Conference, Denver, CO. July 24-27.

\*Wright, J.D., **M.R. Burchell II**, J.D. Shelby, and R.O. Evans. 2006. Hydrologic effects of three restoration techniques on prior-converted wetlands in eastern NC. *In: Hydrology and Management of Forested Wetlands– Proceedings of the ASABE International Conference* New Bern, N.C. April 8-12.

\*Hathaway, J.M., R.O. Evans, M.J. Cook and **M.R. Burchell II**. Constructed wetlands as remediation tools for shallow groundwater contaminated by swine lagoon seepage. 2005. Paper number 052171. ASAE Annual International Meeting, Tampa, FL July 17-20.

\*Poole, C.A., R.W. Skaggs, G.M. Chescheir, J.W. Gilliam, and **M.R. Burchell II**. 2005. The effect of subsurface drains on nitrate-N and phosphorous losses from drained agricultural lands. Paper number 052026. ASAE Annual International Meeting, Tampa, FL July 17-20.

\*Wright, J.D., R.O. Evans, **M.R. Burchell II**, and J.D. Shelby. 2005. The evaluation of a reference wetland in the coastal plain of North Carolina. Paper number 052194. ASAE Annual International Meeting, Tampa, FL July 17-20.

**Burchell II, M.R.**, R.W. Skaggs, G.M. Chescheir, J.W. Gilliam and L.A. Arnold. 2003. Shallow subsurface drains to reduce nitrate losses from drained agricultural fields. Paper number 03-2320. ASAE Annual International Meeting. Las Vegas, NV. July 27-30.

#### **Non-refereed Published Abstracts (1)**

**Burchell, M.R.**, W.F. Hunt III, G.M. Chescheir, and W. Price. 2008. The dune infiltration system - a potential BMP for reducing stormwater flow from ocean outfalls. WRRRI 11<sup>th</sup> Annual Conference. Raleigh, NC. October 8-9.

#### **Non-refereed Research Presentations (23)**

Chescheir, G.M., **M.R. Burchell**, M. Youssef, F. Brigand, K.L. Bass. 2009. Evaluation of an innovative integrated water management system in eastern North Carolina. ASABE-AIM. Reno, NV. June 21-24.

\*Corbin, W.E., **M.R. Burchell**, G.D. Jennings, S.W. Broome, W.W. Kirby-smith, and K.L. Bass. 2009. A water quality and morphological analysis of a restored tidal marsh and stream system in coastal North Carolina. ASABE-AIM. Reno, NV. June 21-24.

Broome, S.W. **M.R. Burchell**, and J.A. Lindgen. 2008. Advancing techniques to establish vegetation in a tidal marsh created at North River Farms. Restore American Estuaries 4<sup>th</sup> National Conference on Coastal and Estuarine Habitat Restoration. Providence, RI. October 11-15.

**Burchell, M.R.**, K.L. Bass, R.O. Evans, S.W. Broome, and J.D. Wright. 2008. North River Farms -five years of lessons learned about restoration of multiple wetland communities. Restore American Estuaries 4<sup>th</sup> National Conference on Coastal and Estuarine Habitat Restoration. Providence, RI. October 11-15, 2008.

**Burchell, M.R.** and W.F. Hunt II. 2008. Groundwater response of a dune infiltration system for reducing stormwater discharge from ocean outfalls. ASABE-AIM Providence, RI June 29-July 2.

\*Corbin, W.E., **M.R. Burchell**, W.W. Kirby-Smith, and K.L. Bass. 2008. Water quality analysis of a restored tidal stream in eastern NC. 2008 SRP Stream Restoration Conference, Asheville, NC. November 2-6.

\*Jarzemsky, R.D., **M.R. Burchell**, J.D. Wright, R.O. Evans. 2008. The hydrologic response of a restored wetland during tropical events in eastern NC. ASABE-AIM Providence, RI June 29-July 2.

Jennings G.D., **M.R. Burchell**, D. Penrose, B. Doll, J. Zink, Z. Price, L. Rozzell, K. Hall, M. Shaffer. 2008. Stream restoration project evaluation in North Carolina, USA. ASABE - 21<sup>st</sup> Century Watershed Technology: Improving Water Quality and Environment. Concepcion, Chile. March 31-April 3.

\*Lindgren, J.A., **M.R. Burchell**, S.W. Broome, R.O. Evans, and K.L. Bass. 2008. Salt-marsh vegetation response in a created tidal marsh in eastern, NC. ASABE-AIM Providence, RI June 29-July 2.

\*Bright, T.M., **M.R. Burchell**, W.F. Hunt III. 2007 Stormwater Dune infiltration Systems for Reducing Pollutant Loadings from Ocean Outfalls. 2<sup>nd</sup> National LID Conference, Wilmington, NC. March 12-14.

**Burchell, M.R.**, T.M. Bright, and W.F. Hunt III. 2007. Kure Beach dune infiltration system for reducing stormwater bacterial export form ocean outfalls. ASABE-AIM Minneapolis, MN June 17-20.

**Burchell, M.R.**, D. Hyatt, D. Line, R.O. Evans, G. Grabow, J.W. Gilliam, D. Osmond, J. Blackwell, and S. Payonk. 2007. Effectiveness of two buffers established through the NC Conservation Reserve Enhancement Program in removing groundwater nitrate. ASABE-AIM Minneapolis, MN June 17-20.

Bass, K.L., R.O. Evans, and **M.R. Burchell**. Comparing Design Methods for Small Stream Restoration in Coastal NC. Presentation at the ASABE International Meeting. Portland, Oregon. July 9-12.

Bass, KL., RO Evans, and **M.R. Burchell**. Comparing Design Methods for Small Stream Restoration in Coastal NC. Presentation at the 2006 Southeast Regional Stream Restoration Conference. Charlotte, NC. October.

**Burchell, M.R.**, J.D. Wright, and R.O. Evans. 2006. Assessing the effectiveness of wetland restoration techniques at North River Farms. Restore America's Estuaries 3<sup>rd</sup> National Conference on Coastal and Estuarine Habitat Restoration. New Orleans, LA. December 11-13.

Evans, R.O., K.L. Bass, **M. R. Burchell**, D. Hinson, R. Johnson, and M. Doxey. 2006. Management alternatives to enhance water quality function of channelized streams and drainage canals. Ditch Project Symposium – Improved management of agricultural drainage ditches for water quality protection: science policy and management. College Park, MD. August 22-23.

Evans, R.O., **M.R. Burchell**, and K.L. Bass. 2006. In-stream wetlands to enhance water quality function of channelized streams and drainage ditches. CEAP-Wetlands Gulf Atlantic Regional Assessment Scoping Meeting. Edgewater, MD. November 8-9.

**Burchell, MR**, WF Hunt, JT Smith and T. Bright. 2005. Stormwater Dune Infiltration System – Kure Beach, NC. ASAE Joint Section Meeting – SC, GA, and NC. Charleston, SC June 2 - 3.

**Burchell II, M.R.**, J.D. Wright, R.O. Evans, and J.D. Shelby. 2005. Hydrologic effects of three wetland restoration techniques on a prior converted site in eastern NC. Society of Wetland Scientists 26<sup>th</sup> Annual Meeting Charleston, SC June 5-10.

**Burchell, M.R.**, J.D. Wright, R.O. Evans, J.D. Shelby, J. Burdette, and S.W. Broome. 2004. North River Farms Wetland Restoration: Phase I and II. Restore America's Estuaries 2<sup>nd</sup> National Conference on Coastal and Estuarine Habitat Restoration. Seattle Washington. September 12-15.

**Burchell II, M.R.**, Osmond, D., Gilliam, J.W., Evans, RO, Parsons, J. 2004. North Carolina Conservation Reserve Enhancement Program. CRP: Planting for the Future. Ft. Collins, CO. June 7-10.

Gilliam, J.W., R.O. Evans, D.L. Osmond, **M.R. Burchell**, and J.E. Parsons. 2004. Are we spending our money wisely on riparian buffers? Presentation at Am. Water Resources Association's Summer Specialty Conference. "Riparian Ecosystems and Buffers: Multi-Scale Structure, Function and Management. Olympic Valley, CA. June 28-30.

Lombardo, L. , J. Spooner, T. Feitshans, B. King, **M. Burchell**, K. Bass et al. 2004. A Farmer's Guide to Agriculture and Water Quality Issues. Presented at USDA-CSREES National Water Quality Conference: Integrating Research, Extension and Education. Clearwater, FL. January 11-14.

### **Non-refereed Poster Presentations (8)**

\*Etheridge, J.R., and **M.R. Burchell**. 2009. Reduction of nitrogen loads from a large-scale wetland restoration in eastern NC. ASABE-AIM Reno, NV. June 21-24.

\*Messer, T.L., and **M.R. Burchell**. 2009. Effectiveness of nitrate reduction in differing riparian widths. ASABE-AIM Reno, NV. June 21-24.

\*Price, W.D., **M.R. Burchell**, W.F. Hunt, and G.M. Chescheir. Kure Beach dune infiltration system: Reducing stormwater bacteria export from direct ocean outfalls. ASABE-AIM Reno, NV. June 21-24.

\*Tilak, A., **M.R. Burchell**, and M.A. Youssef. 2009. Simulating the hydrology and nutrient dynamics of riparian buffers using the Riparian Ecosystem Management Model (REMM). ASABE-AIM Reno, NV. June 21-24.

\*Wiseman, J.D., and **M.R. Burchell**. 2009. Groundwater nitrate reduction in a riparian buffer enrolled in the NC CREP. ASABE-AIM Reno, NV. June 21-24.

\*Knies, S., D. Osmond, **M. Burchell**, and O. Duckworth. 2008. Riparian buffer effectiveness as influenced by vegetation type, buffer width and groundwater depth in the middle coastal plain. Soil Science Society of NC, Raleigh, NC January 2008.

\*Knies, S., D. Osmond, **M. Burchell**, and O. Duckworth. 2008. Riparian buffer effectiveness as influenced by vegetation type, buffer width and groundwater depth in the middle coastal plain. AWRA Virginia Beach, VA. June.

Osmond, D., R.O. Evans, J.W. Gilliam, **M.R. Burchell**, and J. Parsons. 2004. Buffer Implementations: Are programs meeting expectations? ASA-CSSA-SSA Annual Meeting. Seattle, WA. October 31-November 4.

### **Technical reports (2)**

Final Report - Kure Beach Dune Infiltration System (Project 2005-29). Submitted to the NCDOT Research and Analysis Group. July 2007. 80 pp. (**M.R. Burchell**, W.F. Hunt, and T.M. Bright)

Final report – North River Restoration Research (Contract AW03007). Submitted to the NC Ecosystem Enhancement Program. August 2009. 125 pp. (**M.R. Burchell**, M. Vepraskas, S.W. Broome, T. Shear, K.L. Bass, R. Evans, and G. Grabow)