

Eric D. White, PE
Research Engineer, The Water Institute of the Gulf

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Education:

M.S. in Biological and Environmental Engineering, February 2010
Cornell University, Ithaca, New York

B.S. in Agricultural and Biological Engineering, May 2007
The Pennsylvania State University, University Park, Pennsylvania

Research Interests:

Hydrologic and hydraulic modeling; landscape hydrology; flood prediction modeling and risk assessment; estuarine and riverine systems; data analysis and management; model development and optimization

Professional Experience:

The Water Institute of the Gulf **2013-Present**

Research Engineer – Natural Systems Modeling and Monitoring

Member of the modeling team for the 2017 Louisiana Master Plan for a Sustainable Coast

- Lead developer for model integration efforts – updated legacy model code, and developed new, higher level code to integrate and link 5 legacy models into a single model
- Served as a go-between for project management and the numerous modeling teams, as well as the primary point person for model integration and improvement efforts
- Model development team member focused on researching and implementing improved physics in the suite of Master Plan numerical models – focus on hydrology and hydraulics, sediment resuspension and deposition, geomorphology and habitat suitability indices
- Integral member of the model calibration and validation teams
- Integral member of the model uncertainty and scenario analysis teams
- Member of the output synthesis and analysis teams

Philadelphia Water Department **2010-2013**

Engineering Specialist

Urban flood modeling and risk assessment

- Developed detailed hydraulic models to examine basement and surface flooding in urban catchments
- Developed advanced geoprocessing routines to determine the extent of economic flood loss damages
- Determined the feasibility, cost, and benefit of design alternatives

Design support hydraulic modeling

- Developed detailed hydraulic models of urban drainage systems
- Identified alternative engineering designs and determined hydraulic requirements for

a variety of extensive capital improvement projects

URS Corporation

2010

Water Resources Engineering Staff

Regulatory compliance

- Conducted field investigations and desktop (GIS) hydrologic analyses for consumptive water use allocation plans
- General permit filing and compliance for industrial water users

Engineering design & analysis

- Assisted licensed engineers in the design of domestic and industrial wastewater treatment systems
- Conducted water quality data quality control and analysis

Cornell University – Soil and Water Lab

2007 - 2009

EPA STAR Fellow/Research Assistant

Hydrologic modeling

- Developed river basin-scale watershed models
- Modified open-source model code to improve model representation of physical hydrological processes
- Model improvements were developed for and utilized by various NGO planning institutions and regulatory agencies

Field instrumentation of a rural agricultural watershed in the Ethiopian highlands

- Assisted in constructing and installing a network of piezometric monitoring wells
- Assisted in the design and construction of a flow-monitoring weir
- Assisted in field surveys and analysis of an eroded gully network

United States Department of Agriculture – Agricultural Research Service

Summer 2007

Researcher

- Modified open-source model code to incorporate growing-season adjustments for a river basin-scale model

Penn State University – Department of Agricultural and Biological Engineering

2006 - 2007

Undergraduate Research Assistant

- Conducted an independent research project which examined the efficacy of bio-remediating contaminated soils using food waste compost systems
- Assisted graduate students with laboratory work and field research

Awards, Honors:

- EPA Science to Achieve Results (STAR) Fellowship, 2008
- Cornell Einaudi International Research Travel Grant, 2008
- Penn State Undergraduate Discovery Grant, 2006
- Member, Alpha Epsilon, Agricultural Engineering Honor Society, 2005

Professional Registration:

- Professional Engineer, Pennsylvania – #PE081908
- Professional Engineer, Louisiana – registration by comity in process

Professional Memberships:

- Member, American Geophysical Union
- Member, American Society of Civil Engineers
- Member, Coastal & Estuarine Research Federation

Technical Proficiencies:

- USDA Soil & Water Assessment Tool (SWAT) – both traditional application use and code modification
- EPA Stormwater Management Model (SWMM)
- ESRI ArcGIS and *arcpy* language – developed advanced geo-processing tools, including automation routines
- Numerous programming languages: Fortran, Python, R, MATLAB
- Microsoft Access – advanced database analysis and management (including SQL)
- Familiar with numerous industry-standard hydrologic and hydraulic models: HEC-HMS, HEC-RAS, etc.

Peer Reviewed Publications:

Hijuelos, AC, Sable, S, O’Connell, AM, Geaghan, JP, Lindquist, D, White, ED. 2016. Developing Species Distribution Models to Identify Hot Spots in Estuarine Habitats. *Estuaries and Coasts*. doi:10.1007/s12237-016-0199-5.

Knighton, J, E Lennon, L Bastida, ED White. 2016. Stormwater System Parameter Sensitivity and Uncertainty Analysis Using SWMM. *Journal of Hydrologic Engineering*. 21(8).

Knighton, J, ED White, E Lennon. 2013. Development of Probability Distributions for Urban Hydrologic Model Parameters and a Monte Carlo Analysis of Model Sensitivity. *Hydrological Processes*. 28(19): 5131-5139.

White, ED, ZM Easton, DR Fuka, AS Collick, E Adgo, M McCartney, SB Awulachew, YG Selassie, and TS Steenhuis. 2011. Development and application of a physically based landscape water balance in the SWAT model. *Hydrological Processes*. 25(6): 915-925.

Easton, ZM, MT Walter, DR Fuka, ED White, and TS Steenhuis. 2011. A simple concept for calibrating runoff thresholds in quasi-distributed variable source area watershed models. *Hydrological Processes*. 25(20): 3131-3143.

Easton, ZM, DR Fuka, ED White, AS Collick, BB Ashagre, M McCartney, SB Awulachew, AA Ahmed, and TS Steenhuis. 2010. A multi basin SWAT model analysis of runoff and sedimentation in the Blue Nile, Ethiopia. *Hydrology and Earth System Sciences*. 14: 18270-1841.

Steenhuis TS, AS Collick, ZM Easton, ES Leggesse, HK Bayabil, ED White, SB Awulachew, E Adgo, and AA Ahmed. 2009. Predicting Discharge and Erosion for the Abay (Blue Nile) with a Simple Model. *Hydrological Processes*. 23(26): 3728-3737.

White, ED, GW Feyereisen, TL Veith, and DD Bosch. 2009. Improving Daily Water Yield Estimates in the Little River Watershed: SWAT Adjustments. *Transactions of the ASABE*. 52(1): 69-79.

Technical Publications:

Meselhe, E., White, E. D., & Reed, D. J., 2016. *2017 Coastal Master Plan: Appendix C: Modeling*

Chapter 2 – Future Scenarios. Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Brown, S., Couvillion, B., de Mutsert, K., Fischbach, J., Roberts, H., Rodrigue, M., Schindler, J., Thomson, G., Visser, J., & White, E. 2016. *2017 Coastal Master Plan: Appendix C: Modeling Chapter 3 - Modeling Components and Overview.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Alymov, V., Cobell, Z., de Mutsert, K., Dong, Z., Duke-Sylvester, S., Fischbach, J., Hanegan, K., Lewis, K., Lindquist, D., McCorquodale, J. A., Poff, M., Roberts, H., Schindler, J., Visser, J. M., Wang, Z., Wang, Y., & White, E. 2016. *2017 Coastal Master Plan: Appendix C: Chapter 4 – Model Outcomes and Interpretations.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

McCorquodale, A., Couvillion, B., Dortch, Freeman, A., M., Meselhe, E., Reed, D., Roth, B., Shelden, J., Snedden, G., Wang, H., White, E. 2016. *2017 Coastal Master Plan: Attachment C3-1 – Sediment Distribution.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Allison, M., Chen, Q.J., Couvillion, B., Freeman, A., Leadon, M., McCorquodale, A., Meselhe, E., Ramachandirane, C., Reed, D., White, E., 2016. *2017 Coastal Master Plan: Model Improvement Plan, Attachment C3-2 – Marsh Edge Erosion.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

White, E.D., Meselhe, E, McCorquodale, A, Couvillion, B, Dong, Z, Duke-Sylvester, S.M., & Wang, Y. 2016. *2017 Coastal Master Plan: Attachment C3-22 – Integrated Compartment Model (ICM) Development.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Brown, S., Couvillion, B., Dong, Z., Meselhe, E., Visser, J., Wang, Y., & White, E. 2016. *2017 Coastal Master Plan: Model Improvement Plan, Attachment C3-23 - ICM Calibration, Validation, and Performance Assessment.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Meselhe, E.M, White, E.D., & Wang, Y. 2016. *2017 Coastal Master Plan: Attachment C3-24 – Integrated Compartment Model Uncertainty Analysis.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Reed, D.J., Hijuelos, A.C., Hemmerling, S.A., White, E., Fischbach, J., Green, M., & Saucier, M. 2016. *2017 Coastal Master Plan: Attachment 4-11, Metrics.* Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

Conference Proceedings and Presentations:

White, ED, Meselhe, E, Wang, Y, Green, M. 2016. Modeling Uncertainties in the 2017 Louisiana Coastal Master Plan Integrated Compartment Model. *Bays and Bayous Symposium 2016: From Thoughts to Actions – Restoration on the Gulf Coast.* November 30-December 1, 2016. Biloxi, MS.

White, ED. 2016. Integrated Compartment Model (ICM): Application, Scenarios, Uncertainties and Project Evaluations. *State of the Coast.* June 1-3, 2016. New Orleans, Louisiana.

Meselhe, E, White, ED, Reed, D, Grace, A, Wang, Y, Green, M, Freeman, A, Habib, E, and Lindquist, D. 2016. Introduction to the 2017 Coastal Master Plan Future Scenarios (Poster). *State of the Coast.* June 1-3, 2016. New Orleans, Louisiana.

White, ED. 2016. Invited Clinic: Coastal Ecosystem Integrated Compartment Model (ICM): Modeling Framework. *Joint SEN - CSDMS 2016 Annual Meeting: Capturing Climate Change*. May 17-19th 2016 in Boulder, Colorado.

White, ED. 2016. Linking Downscaled Global Climate Models to Planning Level Ecosystem Models. *NCER 2016 – National Conference on Ecosystem Restoration: Ecosystem Restoration in Action*. April 18-22, 2016. Coral Springs, Florida.

White, ED. 2015. Integrated Compartment Model Application: Scenarios, Uncertainties, and Project Evaluations. Special session: Modeling Louisiana's 2017 Coastal Master Plan. *CERF 2015 - Grand Challenges in Coastal & Estuarine Science: Securing Our Future*. November 8-12, 2015. Portland, Oregon.

White, ED, J Knighton, G Martens, M Plourde, and R Rajan. 2012. Geoprocessing tools for surface and basement flooding analysis in SWMM. Chapter 3 in *Pragmatic Modeling of Urban Water Systems, Monograph 21*. Edited by W. James, et al. Published by CHI, Guelph, Ontario. 33-56.

White, ED, ZM Easton, DR Fuka, AS Collick, M McCartney, SB Awulachew, and TS Steenhuis. A water balance-based Soil and Water Assessment Tool (SWAT) for improved performance in the Ethiopian Highlands. *Proceedings of the Intermediate Results Dissemination Workshop- "Improved water and land management in the Ethiopian highlands and its impact on downstream stakeholders dependent on the Blue Nile"*. February 5-6, 2009. Addis Ababa, Ethiopia.

Tebebu, TY, AC Abiy, HE Dahlke, ED White, AS Collick, S Kidnau, F Dadgari, M McCartney, TS Steenhuis. 2009. Assessment of hydrological and landscape controls on gully formation and upland erosion near Lake Tana, Northern Highlands of Ethiopia. *Proceedings of the Intermediate Results Dissemination Workshop- "Improved water and land management in the Ethiopian highlands and its impact on downstream stakeholders dependent on the Blue Nile"*. February 5-6, 2009. Addis Ababa, Ethiopia.

White, ED, ZM Easton, DR Fuka, and TS Steenhuis. 2008. Improved Soil and Water Assessment Tool (SWAT) Performance by Removal of the Curve Number Method. *Proceedings of the AGU 2008 Fall Meeting*. December 15-19, 2008. San Francisco, CA.

White, ED, ZM Easton, DR Fuka, AS Collick, E Adgo, M McCarney, SB Awulachew, YG Selassie, and TS Steenhuis. 2008. Adapting the Soil and Water Assessment Tool (SWAT) for the Nile Basin. *Proceedings of the Second International Forum on Water and Food: IFWF2*. November 10-14, 2008. Addis Ababa, Ethiopia.

White, ED, GW Feyereisen, TL Veith, and DD Bosch. 2008. Improving Daily Water Yield Estimates in the Little River Watershed: SWAT Adjustments. *Proceedings of the Annual International Meeting of the ASABE*. June 29 – July 2, 2008. Providence, RI.

Malinska, KA, ED White, JM Perez, AC Srebro, and TL Richard. 2007. Bioremediation of Biodiesel and Biohydraulic Oils by Food Waste Composting. *Proceedings of ASABE's 2007 International Symposium on Air Quality and Waste Management for Agriculture*. September 16-19, 2007. Broomfield, CO.

Srebro, AC, KA Malinska, ED White, JM Perez, and TL Richard. 2007. Effects of Moisture Content and Soil Additions on Physical Properties and Transport Phenomena for Compost Windrow Design. *Proceedings of ASABE's 2007 International Symposium on Air Quality and Waste Management for Agriculture*. September 16-19, 2007. Broomfield, CO.

