Michael Schramm

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Research Experience

2019 - current
Research Specialist III
Texas A&M AgriLife Research and Extension Service
Texas Water Resources Institute

2016 - 2019
Research Associate
Texas A&M AgriLife Research and Extension Service
Texas Water Resources Institute

2014 - 2016
Research Associate
Oak Ridge National Lab
Environmental Sciences Division

2012 - 2013
Graduate Research Assistant
University of Delaware
Center for Energy and Environmental Policy

Education

2011 - 2013
Master of Energy and Environmental Policy
University of Delaware
Newark, DE

2010 - 2011
B.A. Environmental Studies
University of North Carolina - Wilmington
Wilmington, NC

1999 - 2004
B.S. Biology
University of North Carolina - Wilmington
Wilmington, NC

Research Area

I work at the intersection of environmental science and policy by facilitating water quality planning efforts with state agencies and local stakeholders. I provide expertise in water quality modeling and assessment through the use of GIS and open source programming tools. My primary interest revolves around water policy and the evaluation of implementation effectiveness. I'm especially interested in leveraging open data and open source analytic tools to develop toolkits and resources for evaluating the environmental outcomes of policy implementation.

Skills

data analysis, GIS, grant writing, policy analysis, `Python`, `R`, reproducible research, stakeholder facilitation, water quality modeling and assessment, watershed planning

Peer Reviewed Articles

Schramm, M. P., Gitter, A., & Gregory, L. (2022). Total Maximum Daily Loads and *Escherichia coli* trends in Texas freshwater streams. *Journal of Contemporary Water Research & Education*, *176*, 36–49. https://doi.org/10.1111/j.1936-704X.2022.3374.x

Berthold, T. A., Olsovsky, T., & Schramm, M. P. (2021). Direct mailing education campaign impacts on the adoption of grazing management practices. *Journal of Contemporary Water Research & Education*, *174*, 45–60. https://doi.org/10.1111/j.1936-704X.2021.3360.x

Schramm, M. P. (2021). Estimating statistical power for detecting long term trends in surface water *Escherichia coli* concentrations. *Texas Water Journal*, *12*(1), 140–150. https://doi.org/10.21423/txj.v12i1.7126

Schramm, M. P., Bevelhimer, M. S., & Scherelis, C. (2017). Effects of hydrokinetic turbine sound on the behavior of four species of fish within an experimental mesocosm. *Fisheries Research*, *190*, 1–14. https://doi.org/10.1016/j.fishres.2017.01.012

DeRolph, C. R., Schramm, M. P., & Bevelhimer, M. S. (2016). Predicting environmental mitigation requirements for hydropower projects through the integration of biophysical and socio-political geographies. *Science of The Total Environment*, *566–567*, 888–918. https://doi.org/10.1016/j.scitotenv.2016.05.099

Schramm, M. P., Bevelhimer, M. S., & DeRolph, C. R. (2016). A synthesis of environmental and recreational mitigation requirements at hydropower projects in the United States. *Environmental Science & Policy*, *61*, 87–96. https://doi.org/10.1016/j.envsci.2016.03.019

Pracheil, B. M., DeRolph, C. R., Schramm, M. P., & Bevelhimer, M. S. (2016). A fish-eye view of riverine hydropower systems: The current understanding of the biological response to turbine passage. *Reviews in Fish Biology and Fisheries*, *26*(2), 153–167. https://doi.org/10.1007/s11160-015-9416-8

Cutting, R. H., Cahoon, L. B., Flood, J. F., Horton, L., & Schramm, M. P. (2011). Spill the beans: GoodGuide, Walmart and EPA use information as efficient, market-based environmental regulation. *Tulane Environmental Law Journal*, *24*(291), 45.

Technical Reports

Schramm, M. P., Gitter, A., Rambo, J., deVilleneuve, S., Rhodes, E., & Gregory, L. (2021). *Comparison of Daily Streamflow Estimation Methods in the Thompsons Creek Watershed* (Technical {{Report}} TR-535). Texas Water Resources Institute. https://twri.tamu.edu/publications/technical-reports/2021-technical-reports/tr-535/

Jain, S., & Schramm, M. P. (2021). *Technical Support Document for One Total Maximum Daily Load for Indicator Bacteria in Lavaca River Above Tidal* (Technical Report AS-221). Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/lavaca-river-above-tidal-rocky-creek-recreational-108/108-lavaca-river-addendum-tsd-2021-october-as-221.pdf

Schramm, M. P., & Jha, A. (2020). *Technical Support Document for Four Total Maximum Daily Loads for Indicator Bacteria in Neches River Tidal* [Technical {{Report}}]. Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/neches-river-tidal-recreational-118/118-as-471-neches-tidal-bacteria-tsd-2020-july.pdf

Schramm, M. P., & Jha, A. (2020). *Technical Support Document for One Total Maximum Daily Load for Indicator Bacteria in Hillebrandt Bayou* [Technical Report]. Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/hillebrandt-bayou-recreational-118/118-hillebrandt-tsd-2020june.pdf

Schramm, M. P., & Jha, A. (2020). *Technical Support Document for Two Total Maximum Daily Loads for Indicator Bacteria in Sandy Creek and Wolf Creek* [Technical Report]. Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/sandy-wolf-creeks-recreational-118/118-sandy-wolf-tsd-2020-june.pdf

Escamilla, C. E., Shen, X., Schramm, M. P., & Gregory, L. (2019). *Mid and Lower Cibolo Creek Watershed Protection Plan* (Technical Report TR-512). Texas Water Resources Institute. https://twri.tamu.edu/media/5601/tr-512.pdf

Schramm, M. P., deVilleneuve, S., Jain, S., Berthold, A., & Mohandass, U. (2019). *Carancahua Bay Watershed Protection Plan* (Technical Report TR-514). Texas Water Resources Institute. https://twri.tamu.edu/publications/technical-reports/2019-technical-reports/tr-514/

Jain, S., Ruff, S., & Schramm, M. P. (2018). *Technical Support Document for One Total Maximum Daily Load for Indicator Bacteria in Arenosa Creek* (Technical {{Report}} AS-203). Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/arenosa-creek-recreational-108/108-arenosa-creek-tsd-final-10-02-20.pdf

Schramm, M. P., Berthold, A., Entwistle, C., & Peddicord, K. (2018). *Lavaca River Watershed Protection Plan* (Technical Report TR-507). Texas Water Resources Institute. https://twri.tamu.edu/media/1456/tr-507.pdf

Schramm, M. P., Broad, T., & Arsuffi, T. (2018). *Escherichia coli and Dissolved Oxygen Trends in the Upper Llano River Watershed, Texas (2001-2016)* (Technical Report TR-511). Texas Water Resources Institute. https://twri.tamu.edu/media/1458/tr-511.pdf

Schramm, M. P. (2017). *Technical Support Document for Total Maximum Daily Loads for Indicator Bacteria in Aransas River Above Tidal and Poesta Creek* [Technical Report]. Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/mission-aransas-rivers-recreational-76/76-aransas-poesta-tsd.pdf

Schramm, M. P., Berthold, A., & Entwistle, C. (2017). *Tres Palacios Creek Watershed Protection Plan* (Technical Report TR-500). Texas Water Resources Institute. https://twri.tamu.edu/media/1449/tr-500.pdf

McManamay, R. A., Troia, M. J., DeRolph, C. R., Bevelhimer, M. S., Schramm, M. P., Larson, K. B., Tagestad, J. D., Johnson, G. E., & Jager, H. I. (2015). *Identifying Environmental Opportunities outside the Hydropower Project Boundary: An Updated Methodology of the Basin Scale Opportunity Assessment* (Technical Report ORNL/TM-2014/540). Oak Ridge National Laboratory. https://doi.org/10.13140/rg.2.1.3000.0482

Presentations

Schramm, M., Gitter, A., & Gregory, L. (2021, July). *Trends in indicator bacteria concentrations following TMDL development in Texas freshwater streams*. AWRA Virtual Summer Conference: Connecting Land & Water for Healthy Communities, Virtual.

Schramm, M. P., Jain, S., & Kathuria, D. (2020, August). *Can statistical models provide improved performance over DAR methods for estimating flow-duration curves and daily streamflows in ungauged catchments?* AWRA 2020 Spring Conference, Austin, TX.

Schramm, M. P. (2019, July). *Automating Retrieval of Wastewater Discharge Monitoring Reports with R*. Southern Region Water Conference, College Station, TX.

Schramm, M. P. (2019, March). *Automating Retrieval of Wastewater Discharge Monitoring Reports with R*. National Water Quality Monitoring Conference, Denver, CO.

DeRolph, C. R., Bevilhimer, M. S., & Schramm, M. P. (2015, July). *Development of an Environmental Mitigation Database and Statistical Models for Predicting Likely FERC License Mitigation Requirements at Hydropower Projects*. American Fisheries Society Annual Conference, Portland, OR.

Schramm, M. P., Bevilhimer, M. S., & DeRolph, C. R. (2015, January). *Analysis of Required Environmental Mitigation at Licensed Hydropower Project Across the US.* Southern Division American Fisheries Society Annual

Meeting, Savannah, GA.

Published Software

Schramm, M. P. (2021). *rATTAINS: Access EPA 'ATTAINS' data*. https://CRAN.R-project.org/package=rATTAINS

Schramm, M. P. (2019). *dartx: Drainage area ratio with correction factors*. https://github.com/mps9506/dartx

Schramm, M. P. (2019). *wd4tx: R interface for Texas Water Development Board water data.* https://github.com/mps9506/wd4tx

Schramm, M. P. (2018). *echor: Access EPA 'ECHO' data*. https://CRAN.R-project.org/package=echor

Schramm, M. P. (2018). *tbrf: Time-based rolling functions.* https://CRAN.R-project.org/package=tbrf

Published Datasets

Schramm, M. (2020). *Code and Data for Total Maximum Daily Loads and* Escherichia coli *trends in Texas freshwater streams.* Zenodo. https://doi.org/10.5281/ZENODO.4321729

Schramm, M. (2020). *Estimating statistical power for detecting long term trends in surface water* Escherichia coli *concentrations*. Zenodo. https://doi.org/10.5281/ZENODO.4317858

Bevelhimer, M. S., Schramm, M. P., & DeRolph, C. R. (2015). *Non-Federal Hydropower Mitigation Database*. Oak Ridge National Laboratory. nhaap.ornl.gov/environmental-mitigation

Bevelhimer, M. S., Schramm, M. P., & DeRolph, C. R. (2015). *US Maps of Non-Federal Hydropower Mitigation Data*. Oak Ridge National Laboratory. nhaap.ornl.gov/environmental-mitigation

Bevelhimer, M. S., Schramm, M. P., & DeRolph, C. R. (2015). *US Maps of Non-Federal Hydropower Water Quality Requirements*. Oak Ridge National Laboratory. nhaap.ornl.gov/environmental-mitigation

Grants and Projects

2022 - 2023 *Texas Commission On Environmental Quality TMDL Program*: Support for Research of Methods to Address Dissolved Oxygen (DO) Impairments for Potential Future Total Maximum Daily Loads (TMDLs). Role: CO-PI, PI: Lucas Gregory. Amount: $86,345.

2022 - 2023 *Texas Commission On Environmental Quality TMDL Program*: Implementation Plan Support and Status Updates. Role: Co-PI, PI: Lucas Gregory. Amount: $67,682.

2022 - 2023 *Texas Commission On Environmental Quality TMDL Program*: TMDL Addenda and TMDL Support. Role: Co-PI, PI: Lucas Gregory. Amount: $114,974.

2022 - 2023 *Texas State Soil and Water Conservation Board*: Regional Agricultural BMP Planning Database. Role: PI. Amount: $87,016.

2021 - 2023 *Texas General Land Office Coastal Management Program*: Texas Coastal Nutrient Input Repository; Role: PI. Amount: $63,969.

2021 - 2022 *Texas Commission On Environmental Quality TMDL Program*: Support for Total Maximum Daily Loads (TMDLs) for Indicator Bacteria Listings in the Neches River Basin FY-22, Role: Co-PI, PI: Lucas Gregory. Amount: $81,445.

2021 - 2022 *Texas Commission On Environmental Quality TMDL Program*: Support for Total Maximum Daily Load (TMDL) Implementation Plans (I-Plans) to Address Bacteria Impairments in the Neches River Basin and the Neches-Trinity Coastal Basin FY-22; Role: Co-PI, PI: Lucas Gregory. Amount: $50,618.

2020 - 2021 *Texas Commission On Environmental Quality TMDL Program*: Support for Total Maximum Daily Load (TMDL) Implementation Plans (I-Plans) to Address Bacteria Impairments in the Neches River Basin and the Neches-Trinity Coastal Basin; Role: Project Manager, PI: Lucas Gregory. Amount: $194,944.

2020 - 2021 *Texas Commission On Environmental Quality TMDL Program*: Support for Total Maximum Daily Load (TMDL) for Indicator Bacteria Listing in the Lavaca River Above Tidal; Role: Project Manager, PI: Allen Berthold. Amount: $48,826.

2020 - 2021 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in Basins 15, 16, 17 (FY19); Role: Project Manager, PI: Allen Berthold. Amount: $36,212.

2020 - 2021 *Texas Commission On Environmental Quality TMDL Program*: Support for Total Maximum Daily Loads (TMDLs) to Address Bacteria Impairments in Neches River Tidal, Sandy Creek, Wolf Creek, and Hillebrandt Bayou; Role: Project Manager, PI: Lucas Gregory. Amount: $48,524.

2018 - 2021 *Section 319 Nonpoint Source Grant*: Lavaca River Watershed Protection Plan (WPP) - Coordination, Implementation and Routine Water Quality; Role: Grant Writer, PI: Allen Berthold. Amount: $150,000.

2018 - 2021 *Section 319 Nonpoint Source Grant*: Tres Palacios On-Site Sewage Facilities Remediation; Role: Grant Writer, PI: Allen Berthold. Amount: $327,361.

2018 - 2021 *Section 319 Nonpoint Source Grant*: Tres Palacios WPP implementation; Role: Grant Writer, PI: Allen Berthold. Amount: $355,800.

2019 - 2020 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in the Lower Neches Basin (FY20); Role: Project Manager, PI: Lucas Gregory. Amount: $135,790.

2019 - 2020 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in Basins 15, 16, 17 (FY20); Role: Project Manager, PI: Allen Berthold. Amount: $51,888.

2018 - 2019 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in Basins 15, 16, 17 (FY19); Role: Project Manager, PI: Allen Berthold. Amount: $97,399.

2018 - 2019 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in the Lower Neches Basin (FY19); Role: Project Manager, PI: Lucas Gregory. Amount: $139,343.

2017 - 2019 *Texas General Land Office Coastal Management Program*: Mission and Aransas Rivers TMDL I-Plan implementation; Role: Grant Writer, PI: Allen Berthold. Amount: $83,979.

2017 - 2019 *Texas General Land Office Coastal Management Program*: Coordinating Implementation of the Tres Palacios Watershed Protection Plan; Role: Grant Writer, PI: Allen Berthold. Amount: $95,816.

2017 - 2018 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in Basins 15, 16, 17 (FY18). Amount: $220,166.

2016 - 2017 *Texas Commission On Environmental Quality TMDL Program*: Basins Approach to Address Bacterial Impairments in Basins 15, 16, 17 (FY17); Role: Project Manager, PI: Allen Berthold. Amount: $292,699.

2015 - 2017 *Texas State Soil and Water Conservation Board*: Coordinating Implementation of the Upper Llano Watershed Protection Plan; Role: Project Manager, Co-PIs: Tom Arsuffi, Kevin Wagner. Amount: $347,493.

Awards and Honors

Center for Energy and Environmental Policy Leadership Award

North Carolina Department of Transportation Environmental Service Scholarship

Service

Review committees

2018 - current: Texas Hill Country Headwaters Conservation Initiative Regional Conservation Partnership Program

2017 - current: TWRI Mills Scholarship Program

2017 - current: USGS Graduate Research Program

2021 - 2021: Texas A&M AgriLife, Texas A&M AgriLife Extension, and Texas A&M Engineering Station Water Exceptional Item Programs of Excellence

2019 - 2020: Texas A&M AgriLife, Texas A&M AgriLife Extension, and Texas A&M Engineering Station Water Seed Grant Initiative

Peer review

R Journal, Remote Sensing, Sustainability, Water