

Michael Schramm

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Research Experience

TEXAS A&M AGRI LIFE RESEARCH

MAY 2016 - CURRENT

Texas Water Resources Institute

Research Specialist IV (Sept. 2023 - current)

Research Specialist III (Aug. 2019 - Aug. 2023)

Research Associate (May 2016 - Aug. 2019)

Lead and collaborate on watershed management and water quality assessment projects. Responsible for cultivating and maintaining relationships with project sponsors, developing and securing external funding, and carrying out projects. Develop internal and external facing open-source tools for watershed planning, data analysis, and data sharing.

OAK RIDGE NATIONAL LABORATORY/

OAK RIDGE ASSOCIATED UNIVERSITIES

FEB. 2014 - FEB. 2016

Environmental Sciences Division

Research Associate (Feb. 2014 - Feb. 2016)

Collaborated on projects focused on improving the understanding of environmental impacts and mitigation of hydropower technologies. Work included database development, statistical analysis, experiments, and publication.

UNIVERSITY OF DELAWARE

SEPT. 2012 - JUNE 2013

Center for Energy and Environmental Policy

Graduate Research Assistant (Sept. 2012 - June 2013)

Provided research, data analysis, and conducted interviews for environmental policy analysis reports commissioned by the Delaware General Assembly. Policy analysis work focused on green infrastructure promotion and revitalization of brownfield sites.

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

University of North Carolina - Wilmington

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., Kikoyo, D., Wright, J., & Jain, S. (2024). A meta-analysis of the impacts of best management practices on nonpoint source pollutant concentration. *Frontiers in Water*, 6(1397615). <https://doi.org/10.3389/frwa.2024.1397615>
- Berthold, T. A., McCrary, A., deVilleneuve, S., & Schramm, M. (2023). Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States. *PLoS ONE*, 18(11), e0294134. <https://doi.org/10.1371/journal.pone.0294134>
- Schramm, M. (2023). Assessing linkages between watershed nutrient loading and water quality in a subtropical estuary with generalized additive models. *PeerJ*. <https://doi.org/10.7717/peerj.16073>
- Schramm, M., 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/twj.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. <https://www.jstor.org/stable/43294112>

Technical Reports

- Jain, S., & Schramm, M. (2023). *Technical Support Document for One Total Maximum Daily Load for Indicator Bacteria in Poesta Creek* (Technical Report AS-484). Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/mission-aransas-rivers-recreational-76/as-484-76a-poesta_creek_tsd.pdf
- Jordan, T., Schramm, M., Kikoyo, D., & Tague, A. (2023). *Review of Total Maximum Daily Load Methods to Address Dissolved Oxygen Impairments Final Report* (No. TR_549). Texas Water Resources Institute. <https://twri.tamu.edu/publications/technical-reports/2023-technical-reports/tr-549/>
- Kikoyo, D., Jordan, T., Jain, S., Schramm, M., & Gregory, L. (2023). *Technical Support Document for Five Total Maximum Daily Loads for Indicator Bacteria in the Thompsons Creek Watershed, Texas* (Technical Report TR-545). Texas Water Resources Institute. <https://twri.tamu.edu/media/6171/tr-545.pdf>
- Schramm, M. (2023). *Texas Coastal Nutrient Input Repository - Task 3 Report Lavaca Bay Water Quality Responses to Nutrient Loading* (Technical Report TR-546). Texas Water Resources Institute. https://twri.tamu.edu/media/6194/tr_546.pdf
- Schramm, M. (2023). *Texas Coastal Nutrient Input Repository - Task 4 Report Statistical Models for Nutrient Loading into Lavaca Bay* (Technical Report TR-543). Texas Water Resources Institute. https://twri.tamu.edu/media/6170/tr_543.pdf
- Yang, L., & Schramm, M. (2023). *Technical Support Document for One Total Maximum Daily Load for Indicator Bacteria in Cedar Creek* (Technical Report AS-485). Texas Commission on Environmental Quality. https://www.tceq.texas.gov/downloads/water-quality/tmdl/lufkin-area-watersheds-recreational-118/as-485-118h-cedar_creek_tsd.pdf
- Kikoyo, D., deVilleneuve, S., Schramm, M., & Gregory, L. (2022). *Streamflow and Water Quality Properties in the Thompsons Creek Watershed in the Vicinity of Bryan/College Station, 2020–2022* (Technical Report TR-538). Texas Water Resources Institute. <https://twri.tamu.edu/publications/technical-reports/2022-technical-reports/tr-538/>
- 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 AS-471). 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). *Carancabua 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>
- Kramer, C., Dsouza, C., Schramm, M., Griffin, M., Teron, L., Scattone, R., Byrne, J., & Kurdgelashvili, L. (2014). *Brownfields: From Redevelopment to Revitalization* [Technical Report]. Center for Energy and Environmental Policy, University of Delaware. <http://udspace.udel.edu/handle/19716/13108>

Software

- Schramm, M. (2023). *adc: Calculate Antecedant Discharge Conditions* (Version 1.0.0) [R]. <https://CRAN.R-project.org/package=adc>
- Schramm, M. P. (2023). *echor: access EPA "ECHO" data* (Version 0.1.7) [R]. <https://CRAN.R-project.org/package=echor>
- Schramm, M. P. (2023). *rATTAINS: access EPA "ATTAINS" data* (Version 0.1.4) [R]. <https://CRAN.R-project.org/package=rATTAINS>
- Schramm, M. P. (2021). *ldc: Calculate and plot pollutant load duration curves* [R]. <https://github.com/TxWRI/ldc>
- Schramm, M. P. (2020). *tbrf: time-based rolling functions*. (Version 0.1.5) [R]. <https://CRAN.R-project.org/package=tbrf>
- Schramm, M. P. (2019). *dartx: drainage area ratio with correction factors* (development) [R]. <https://github.com/mps9506/dartx>
- Schramm, M. P. (2019). *wd4tx: R interface for Texas Water Development Board water data*. (development) [R]. <https://github.com/mps9506/wd4tx>

Datasets

- Kikoyo, D., Jain, S., Wright, J., & Schramm, M. P. (2023). *TWRI Non-point Source Best Management Practice Database* [Data set]. <https://doi.org/10.5281/zenodo.8302472>
- Schramm, M. (2023). *Texas Coastal Nutrient Input Repository - Lavaca Bay* (Version 1.3). Zenodo. <https://doi.org/10.5281/ZENODO.7630758>
- Schramm, M. P. (2020). *Code and Data for Total Maximum Daily Loads and Escherichia coli trends in Texas freshwater streams*. (Version v1.0). Zenodo. <https://doi.org/10.5281/ZENODO.4321729>
- Schramm, M. P. (2020). *Estimating statistical power for detecting long term trends in surface water Escherichia coli concentrations* (Version v1.0). Zenodo. <https://doi.org/10.5281/ZENODO.4317858>
- Bevelhimer, M. S., Schramm, M. P., & DeRolph, C. R. (2015). *Non-Federal Hydropower Mitigation Database* [Data set]. Oak Ridge National Laboratory. <https://hydrosource.ornl.gov/dataset/us-hydropower-mitigation-database>

Grants and Contracts

2024 - 2027 *Matagorda Bay Mitigation Trust*: Assessment of PFAS concentrations and loadings in the Lavaca Bay watershed. Role: PI. Amount: \$477,186.

2024 - 2027 *Section 319 Nonpoint Source Grant*: Sandy Creek Watershed Monitoring and Characterization. Role: PI. Amount: \$400,646.

2025 - 2026 *Institute for Advancing Health Through Agriculture*: Safe and sustainable agriculture: Using reclaimed municipal wastewater for crop irrigation and managing emerging contaminants. Cole: Co-PI, PI: Allen Berthold. Amount: \$400,000.

2023 - 2025 *Section 319 Nonpoint Source Grant*: Medina River Below Medina Diversion Lake Watershed Protection Plan. Role: Co-PI, PI: Lucas Gregory. Amount: \$322,428.

2024 - 2025 *Texas Commission On Environmental Quality TMDL Program*: Tres Palacios Bay Recreational Beach Watershed Characterization. Role: Co-PI; PI: Lucas Gregory. Amount: \$140,592.

2024 - 2025 *Texas Commission On Environmental Quality TMDL Program*: An Approach to Address Indicator Bacteria Impairments in the Ayish Bayou and West Mud Creek Watersheds. Role: Co-PI; PI: Lucas Gregory. Amount: \$207,030.

2023 - 2025 *Texas Commission On Environmental Quality TMDL Program*: TMDL I-Plan Support and Updates. Role: Co-PI, PI: Lucas Gregory. Amount: \$93,172.

2023 - 2024 *Texas Commission On Environmental Quality TMDL Program*: Research Methods to Address the Tres Palacios Bay Recreational Beach Bacteria Impairment. Role: Co-PI, PI: Lucas Gregory. Amount: \$62,603.

2022 - 2024 *Texas State Soil and Water Conservation Board*: Regional Agricultural BMP Planning Database. Role: PI. Amount: \$87,016.

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 (Poesta Creek, Cedar Creek, Neches River Tidal). Role: Co-PI, PI: Lucas Gregory. Amount: \$114,974.

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

Universities Council on Water Research (UCOWR), Journal Of Contemporary Water Research and Education Paper of the Year (2023)

Center for Energy and Environmental Policy Leadership Award (2013)

North Carolina Department of Transportation Environmental Service Scholarship (2011)

Service

REVIEW COMMITTEES

2017 - current: TWRI Mills Scholarship Program

2017 - current: USGS Graduate Research Program

2018 - 2022: Texas Hill Country Headwaters Conservation Initiative Regional Conservation Partnership 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

Aquatic Sciences, Journal of Open Source Software, R Journal