

Michael Schramm

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Research Experience

Sept. 2023 - current Research Specialist IV	Texas A&M AgriLife Research Texas Water Resources Institute
Aug. 2019 - August 2023 Research Specialist III	Texas A&M AgriLife Research Texas Water Resources Institute
May 2016 - Aug. 2019 Research Associate	Texas A&M AgriLife Research Texas Water Resources Institute
Feb. 2014 - Feb. 2016 Research Associate	Oak Ridge National Lab/ORAU Environmental Sciences Division
Sept. 2012 - June 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

- Berthold, T. A., McCrary, A., deVilleneuve, S., & Schramm, M. (n.d.). Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States. *In Press*.
- 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

- 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
- 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://hydrosourc.ornl.gov/dataset/us-hydropower-mitigation-database>

Grants and Contracts

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

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.

2023 - 2024 *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, R Journal, Remote Sensing, Sustainability, Water