Michael SCHRAMM

Researcher | Watersheds, water quality and open science

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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

Communication	academic and technical writing, extension and outreach programming, stakeholder facilitation
Project Management	budgeting, data management, grant writing, proposal development, quality assurance
Technical/Computing	ArcGIS, Excel, 'git' (limited), 'Python', 'R', Word
Water Management and Science	statistical methods for water quality, TMDL development, water quality policy, watershed planning

Experience

current – 2019 | **Research Specialist III, Texas A&M AgriLife Research and Extension Service, Texas Water Resources Institute**

- Primarily responsible for collaborating with internal and external scientists and faculty to design, plan, conduct, and coordinate water focused research and extension projects. Led or collaborated in the development of 23 grants and contracts securing over $3 million in project dollars.
- Provide supervision and mentorship to multiple graduate students and other technical or field staff involved in research. Developed guidance and best practice documents for data visualization and data anlysis in R statistical software.
- Led the development, evaluatation, and application of research and statistical methods for water resources planning. Published numerous technical reports, 4 journal articles (others in development and review), and R software packages (adc, echor, ldc, rATTAINS, twriTemplates, wd4tx)
- Conduct engagement, education, and extension activites. Provided 59 public presentations with over 967 contact hours to the general public, agency staff, local governments and other stakeholders.

2019 – 2016 | **Research Associate, Texas A&M AgriLife Research and Extension Service, Texas Water Resources Institute**

- Faciliate stakeholder engagement and provide technical support for watershed planning efforts in collaboration with state agencies. Responsible for development of watershed protection plans and/or TMDLs in Arenosa Creek, Caranacahua Bay, Lavaca River, Lower Cibolo Creek, Tres Palacios Creek and others.

2016 – 2014 **Research Associate, Oak Ridge National Lab, Environmental Sciences Division**

- Developed relational database and methods to assess environmental mitigation at U.S. hydropower facilities.
- Utilized statistical and geospatial methods to analyze movement and behavioral response data.
- Published three peer-reviewed journal articles, two technical reports, and one conference presentation related to research findings.

2013 – 2012 **Graduate Research Assistant, University of Delaware, Center for Energy and Environmental Policy**

- Responsible for interviews, data analysis, and developing policy reccomendations in policy analysis reports for the Delaware General Assembly.

Education

2013 Master of Energy and Environmental Policy, University of Delaware
2011 B.A. Environmental Studies, University of North Carolina - Wilmington
2004 B.S. Biology, University of North Carolina - Wilmington

Selected Peer-Review Publications

1. Schramm MP, 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. DOI:10.1111/j.1936-704X.2022.3374.x

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

3. Schramm MP, Bevelhimer MS, DeRolph CR (2016) A synthesis of environmental and recreational mitigation requirements at hydropower projects in the United States. *Environmental Science & Policy*, 61:87–96. DOI:10.1016/j.envsci.2016.03.019

Selected Technical Reports

1. Schramm M, Jha A (2020) Technical Support Document for Four Total Maximum Daily Loads for Indicator Bacteria in Neches River Tidal. URL: `https://www.tceq.texas.gov/assets/public/waterquality/tmdl/118nechestidal/118-nechestidal-bacteria-tsd-2020july.pdf`

2. Schramm MP, deVilleneuve S, Jain S, Berthold A, Mohandass U (2019) Carancahua Bay Watershed Protection Plan. URL: `https://twri.tamu.edu/publications/technical-reports/2019-technical-reports/tr-514/`

3. Schramm MP, Broad T, Arsuffi T (2018) *Escherichia Coli* and Dissolved Oxygen Trends in the Upper Llano River Watershed, Texas (2001-2016). URL: `https://twri.tamu.edu/media/1458/tr-511.pdf`

Software

1. Schramm MP (2019) dartx: Drainage area ratio with correction factors. URL: `https://github.com/mps9506/dartx`

2. Schramm MP (2019) wd4tx: R interface for Texas Water Development Board water data. URL: `https://github.com/mps9506/wd4tx`

3. Schramm MP (2018) echor: Access EPA 'ECHO' data. URL: `https://CRAN.R-project.org/package=echor`

4. Schramm MP (2018) tbrf: Time-based rolling functions. URL: `https://CRAN.R-project.org/package=tbrf`