Corianne Tatariw, Ph.D.

Ecosystem Biogeochemist

EDUCATION

Ph.D. 2016, Ecology and Environmental Sciences, University of Maine, Orono, ME (UM).

M.S. 2012, Biology (Focus: Aquatic Ecology), University of Alabama, Tuscaloosa, AL (UA).

B.S. 2008, Environmental Science (Concentration: Aquatic Resources, Minor: Chemistry), Virginia Polytechnic Institute and State University, Blacksburg, VA (VT).

PEER-REVIEWED PUBLICATIONS

*underline indicates student mentee

Tatariw, **C.**, B. Mortazavi, N. Flournoy, A. Kleinhuizen, P. Crawford, E.B. Overton, and P. A. Sobecky. 2022. Enhanced susceptibility to oiling may limit denitrification recovery in marshes subjected to woody encroachment. *Frontiers in Environmental Sciences* 10(951365).

Tollette, D., B. Mortazavi, **C. Tatariw**, N. Flournoy, and P. A. Sobecky. 2022. Water Accommodated Fraction of Macondo Oil Has Limited Effects on Nitrate Reduction in Northern Gulf of Mexico Salt Marsh Sediments Regardless of Prior Oiling History. *Water, Air, and Soil Pollution* 233(310).

Starr, S.F., B. Mortazavi, **C. Tatariw**, K. Kuehn, J.A. Cherry, T. C. Ledford, E. Smyth, A. Griffin Wood, and S. E. Sebren. 2022. Poor recovery of fungal denitrification limits nitrogen removal capacity in a constructed Gulf Coast marsh. *Soil Biology and Biochemistry* 170.

Grande, E., B. Arora, A. Visser, M. Montalvo, A.E. Braswell, E.C. Seybold, **C. Tatariw**, K. Beheshti, and M.A. Zimmer. 2022.Tidal frequencies and quasiperiodic subsurface water level variations dominate redox dynamics in a salt marsh system. *Hydrological Processes* 36(5).

Tatariw, C., O. U. Mason, and B. Mortazavi. 2021. Ditching nutrients: Roadside drainage networks are hotspots for nitrogen removal. *Journal of Geophysical Research: Biogeosciences* 126(7). *Featured as a Research Spotlight in Eos Science News.*

Patel, K. F., **C. Tatariw**, J. D. MacRae, T. Ohno, S. J. Nelson, and I. J. Fernandez. 2021. Repeated freeze- thaw cycles increase extractable, but not total, carbon and nitrogen in a Maine coniferous soil. *Geoderma* 402: 2—3.

Ledford, T. C., B. Mortazavi, **C. Tatariw**, S. F. Starr, E. Smyth, Abigail Griffin Wood, L. T. Simpson, J. A. Cherry. 2021. Ecosystem carbon exchange and nitrogen removal rates in two 33-year-old constructed salt marshes are similar to those in a nearby natural marsh. *Restoration Ecology* 29(7).

Tatariw, C., T. C. Ledford, S. F. Starr, E. Smyth, A. Griffin. Wood, L. T. Simpson, J. A. Cherry, and B. Mortazavi. 2021. Nitrate reduction capacity is limited by belowground plant recovery in a 32-year-old created salt marsh. *Restoration Ecology* 29(1).

Patel, K. F., **C. Tatariw**, J. D. MacRae, T. Ohno, S. J. Nelson, and I. J. Fernandez. 2020. Snowmelt periods as hot moments for soil N dynamics: A case study in Maine, USA. *Environmental Monitoring and Assessment* 192(12).

Ledford, T. C., B. Mortazavi, **C. Tatariw**, O. U. Mason. 2020. Elevated nutrient inputs to marshes differentially impact carbon and nitrogen cycling in two northern Gulf of Mexico saltmarsh plants. *Biogeochemistry* 149(1).

Salvino, C. J., K. Patel, I. J. Fernandez, M. C. Gruselle, **C. Tatariw**, and J. D. MacRae. 2019. Phosphorus limits nitrogen dynamics in the O horizon of a forested watershed in Maine, USA. *Soil Science Society of America Journal*. 83(4).

Tatariw, **C.**, N. Flournoy, A. Kleinhuizen, D. Tollette, E. Overton, P. A. Sobecky, and B. Mortazavi. 2018. Salt marsh denitrification is impacted by oiling intensity six years after the *Deepwater Horizon* spill. *Environmental Pollution* 243(Pt B).

Tatariw, C., J. D. MacRae, I. J. Fernandez, M. C. Gruselle, C. J. Salvino, and K. S. Simon. 2018. Chronic nitrogen enrichment at the watershed scale does not enhance microbial phosphorus limitation. *Ecosystems* 21(1).

Patel, K.. F., **C. Tatariw,** J. D. MacRae, T. Ohno, S. J. Nelson, and I. J. Fernandez. 2018. Soil carbon and nitrogen responses to snow removal and concrete frost in a northern coniferous forest. *Canadian Journal of Soil Science* 98(3).

Hinshaw, S.H*., **C. Tatariw***, N. Flournoy, A. Kleinhuizen, C. Taylor, P.A. Sobecky, and B. Mortazavi. 2017. Vegetation loss decreases salt marsh denitrification capacity: Implications for marsh erosion. *Environmental Science and Technology* 51(15). **contributed equally*

Tatariw, C., K. F. Patel, J. D. MacRae, and I. J. Fernandez. 2017. Snowpack loss promotes soil freezing and concrete frost formation in a northeastern temperate softwoods stand. 2017. *Northeastern Naturalist* 24(Special Issue 7).

Tatariw, C., E. L. Chapman, R. A. Sponseller, B. Mortazavi, and J. W. Edmonds. 2013. Denitrification in a large river: Consideration of geomorphic controls on microbial activity and community structure. *Ecology* 94(10).

RESEARCH APPOINTMENTS

2018—Present: Postdoctoral Fellow, Dept. of Biological Sciences, University of Alabama

- Develop and lead projects to investigate the biotic and abiotic drivers of nitrogen removal in wetland soils, including coastal salt marshes and human-created wetlands.
- Develop and submit proposals for internal and external funding sources, including NSF, DOE, and SeaGrant.
- Mentor graduate and undergraduate students in project development, research methods and science communication.

2016—2018: Postdoctoral Fellow, Dept. of Biological Sciences, UA/ Dauphin Island Sea Lab (DISL)

- Completed collaborative research to investigate the long-term impacts of the *Deepwater Horizon* oil spill on salt marsh ecosystem structure and biogeochemical function.
- In charge of two field projects to study the effects of oiling intensity and woody encroachment on salt marsh nitrogen removal.
- Coordinated research reporting and data management for research group.

2012—2016: Graduate Research Assistant, School of Biology and Ecology, UM

- Participated in collaborative NSF-funded study to determine the effect of long-term nitrogen deposition and acidification on soil microbial community composition and functional capacity.
- Developed and funded snow-removal study to investigate the impact of snowpack loss on microbial community structure and respiration in collaboration with a Ph.D. student.

2009—2011: Graduate Research Associate (summers), Department of Biological Sciences, UA

- Conducted research investigating the roles of microbial community structure and sediment particle size as drivers of nitrogen removal in a large river.

GRANTS

Current

2022: Investigating hydrologic connectivity as a driver of biogeochemical flood response in wetland systems. DOE Earth and Environmental Systems Sciences Division. Total: $999,942. Mortazavi (PI), Tatariw (acting PI), Chen, Jones, Stegen.

2020: Linking nutrient reactivity and transport in subsurface flowpaths along a terrestrial-estuarine continuum. DOE Biological and Environmental Research. Total: $599,939; Subaward: $30,668. Zimmer (PI), Arora, Braswell, Seybold, Tatariw, and Visser. 07/2020—06/2022.

Completed

2021: How does plant type affect nutrient removal in coastal salt marshes? College Academy for Research, Scholarship and Creative Activity. $5,880. Mortazavi (PI)*. Co-authored internal grant with advisor and PhD candidate.*

2019: College Academy for Research, Scholarship and Creative Activity. $4,554. Mortazavi (PI)*. Co-authored internal grant with advisor.*

2015: Maine Agricultural and Forest Experimental Station Analytical Lab Grant. $2,675.
Sawyer Water Research Lab Graduate Research Grant. $450.
UM Graduate Student Government Grant. $1,274.
Instrumentl.com Crowdfunding Campaign. $860. Patel (PI) and Tatariw.

2014: Ecology and Environmental Sciences Research Award. $757.
UM Graduate Student Government Grant. $1,300.

2013: Maine Agricultural and Forest Experimental Station Analytical Lab Grant. $2,450.
UM Graduate Student Government Grant. $990.

2011: UA Graduate School Travel and Research Grant. $300.
Sigma Xi Grant-in-Aid of Research. $400.

2010: UA Graduate School Travel and Research Grant. $300.

TEACHING

2015—2016: Graduate Teaching Assistant School of Biology and Ecology, UM
Introductory Biology Lab: Inquiry Biology (BIO 100): Guided students through scientific method during lab time, led class discussions, graded lab materials (including written reports), aided with course topics outside of class, and proctored lecture exams

2009—2011: Graduate Teaching Assistant, Department of Biological Sciences, UA
Microbe and Man: Introductory Microbiology Laboratory for Nursing Majors (BSC 242): Prepared and delivered lectures on lab material, demonstrated and assisted with basic microbiological techniques, wrote and graded laboratory exams, and proctored lecture exams

Guest Lectures: *Intro. to Oceanography* (DISL), *Intro. to Ecology & Environmental Sciences (EES 117)* (UM), *Soil Microbiology (PSE 469)* (UM)

AWARDS

2019: Coastal and Estuarine Research Federation Rising TIDES Travel Grant. $500.
2017: Coastal and Estuarine Research Federation Travel Grant. $300.
2016: Edith Patch Award. *Recognition of research accomplishments for women in STEM at UMaine.*
2015: Green Lake Travel Grant. $1,360.
2014: National Science Foundation East Asia and Pacific Summer Institute Fellowship. *Stipend and airfare to conduct research in New Zealand.*
Dr. Miroslaw M. Czapowskyj Scholarship. $500.
2011: Inge and Ilouise Hill Research Fellowship. $3000.
UA Graduate School Travel and Research Grant. $300.

PRESENTATIONS

Invited

Tatariw, C. Constructing ecosystem function: Assessing nitrogen removal in human created wetlands. Seminar. Department of Biological Sciences, University of Alabama, Tuscaloosa, AL, February 2022.

Tatariw, C. Nitrogen removal under stress: Can wetlands keep up in a changing world? Virtual seminar. Florida State University Coastal and Marine Laboratory. St. Teresa, FL, June 2021.

Tatariw, C. Intentional and accidental function: Can human created wetlands provide the same nitrogen removal services as their natural counterparts? Virtual seminar. Fisheries and Aquatic Sciences, University of Florida, Gainesville, FL, October 2020.

Tatariw, C. Nitrogen removal under stress: Can wetlands keep up in a changing world? Seminar. Department of Biological Sciences, University of New Orleans, New Orleans, LA, February 2020.

Tatariw, C. and K. Patel. Data story: The effect of snow removal on soil moisture. Acadia Learning Snowpack Project 2015 Summer Institute, Schoodic Institute, Schoodic Point, Maine, June 2015.

Selected Conference/ Symposium Presentations

*underline indicates student mentee

Tatariw, C., T.C. Ledford, S.A. Rinehart, J. Dybiec, E. Fromenthal, J.A. Cherry, and B. Mortazavi. How does salt marsh plant species affect temporal patterns in nitrogen removal? Joint Aquatic Sciences Meeting, Grant Rapids, MI, May 2022.

T.C. Ledford, **C. Tatariw**, S. Sickler, J. Howeth, and B. Mortazavi. How beavers play a role in nitrogen removal and retention within the landscape. Joint Aquatic Sciences Meeting, Grant Rapids, MI, May 2022.

Rinehart, S. J. Dybiec, A. Hammill, **C. Tatariw**, T.C. Ledford, E. Fromenthal, B. Mortazavi, and J.A. Cherry. Burrowing crabs affect edaphic conditions in created and natural tidal wetlands along the northern Gulf of Mexico. Joint Aquatic Sciences Meeting, Grant Rapids, MI, May 2022.

Tatariw, C., D.M. Peterson, T.C. Ledford, C.N. Jones, B. Mortazavi. Land Use Legacies and Riparian Wetlands Influence Nitrogen Biogeochemistry in Two Low-Gradient, Headwater Streams. AGU Fall Meeting. Virtual. December 2021.

Tatariw, C., Erin C. Seybold, M. Montalvo, M. A. Zimmer, A. Kleinhuizen, A. Visser, A. E. Braswell, E. Grande, B. Arora. Seasonal Precipitation is a Hydrologic Driver of Salt Marsh Nitrogen Removal. AGU Fall Meeting. Virtual. December 2021.

Tatariw, C., E. C. Seybold, M. Montalvo, M.A. Zimmer, A. Kleinhuizen, A. Visser, A. Braswell, E. Grande, B. Arora, A. Greene. The role of seasonal precipitation as a hydrologic driver of salt marsh nitrogen removal. CERF Biennial Conference. Virtual. November 2021.

Ledford, T.C., B. Mortazavi, **C. Tatariw**, S. F. Starr, E. Smyth, L.T. Simpson, A. Griffin Wood, J.A. Cherry. Man vs. Nature: Are constructed and natural marshes comparable in nitrogen removal and carbon sequestration? CERF Biennial Conference. Virtual. November 2021.

Simpson, L.T., **C. Tatariw**, B. Mortazavi, J.A. Cherry. Abiotic and biotic encroachment in the salt marsh-mangrove ecotone. CERF Biennial Conference. Virtual. November 2021.

Zimmer, M., M. Montalvo, E. Grande, A. Visser, E. Seybold, **C. Tatariw**, A. Braswell, B. Arora, P. Willits. Quantification of hydrologic exchange across a salt marsh. CERF Biennial Conference. Virtual. November 2021.

Tatariw, C., B. Mortazavi, O.U. Mason. Ditching Nutrients: Roadside Drainage Networks are Hotspots for Coastal Nitrogen Removal. Bays and Bayous Symposium. Virtual. December 2020.

Tatariw, C., T. Ledford, S. F. Starr, L. T. Simpson, E. Smyth, A. Griffin Wood, J. Cherry, B. Mortazavi. Building ecosystem function: Do constructed salt marshes remove nitrogen as well as their natural counterparts? CERF Biennial Conference, Mobile, AL, November 2019.

Tatariw, C., A. Kleinhuizen, N. Flournoy, S. Rajan, P. A. Sobecky, B. Mortazavi. Salt marsh resilience in the Anthropocene: Evaluating N removal in response to human-driven disturbances. Gulf of Mexico Oil Spill and Ecosystem Science Conference, New Orleans, LA, February 2019.

Tollette, D., **C. Tatariw,** B. Mortazavi. The effects of crude oil on northern Gulf of Mexico salt marsh nitrogen cycling. Alabama Water Resources Conference, 5-7 September 2018, Orange Beach, AL. *Awarded 3rd Place in Student Poster Competition.*

Tatariw, C., N. Flournoy, S. Rajan, A. Kleinhuizen, P. A. Sobecky, B. Mortazavi. Does *Avicennia germinans* expansion alter salt marsh nitrogen removal capacity? CERF Biennial Conference, Providence, RI, November 2017.

Ledford, T. C., A. Kleinhuizen, **C. Tatariw**, B. Mortazavi. The impact of nutrient loading on nitrogen removal in a *Juncus roemerianus* and *Spartina alterniflora* dominated salt marsh in the northern Gulf of Mexico. Alabama Water Resources Conference, Orange Beach, AL, September 2017. *Awarded 2nd Place in Student Poster Competition.*

Tollette, D., **C. Tatariw**, B. Mortazavi. The effects of crude oil on northern Gulf of Mexico salt marsh nitrogen cycling. Alabama Water Resources Conference, Orange Beach, AL, September 2017. *Awarded 1st Place in Student Poster Competition.*

Tatariw, C., K. Patel, I. J. Fernandez, J. D. MacRae. How does snowpack loss affect soil microbial community composition and activity? Northeast Ecosystem Research Cooperative Conference, Saratoga Springs, NY, March 2017.

Tatariw, C., J. D. MacRae, K. Simon, I. J. Fernandez, M. C. Gruselle. The effect of long-term nitrogen deposition on soil microbial community composition. Soil Science Society of America Annual Meeting, Minneapolis, MN, November 2015.

Tatariw C., J. D. MacRae, K. Simon, I. J. Fernandez, M. C. Gruselle. The effect of catchment-scale nitrogen (N) enrichment on soil microbes. Gordon Research Conference: Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Andover, NH, June 2015.

Tatariw C., J. D. MacRae, K. Simon, I. J. Fernandez, M. C. Gruselle**.** The effect of long term nitrogen deposition on structure and function of soil microbial communities. Northeast Ecosystem Research Cooperative Conference, Saratoga Springs, NY, March 2015.

Rothenheber, D., J. D. MacRae, **C. Tatariw**. The effect of long-term nitrogen enrichment on bacterial and fungal abundance at Bear Brook Watershed. Annual Meeting, North Eastern Microbiologists: Physiology, Ecology, and Taxonomy, Blue Mountain Lake, NY, June 2013.

Tatariw, C., E.L. Chapman, B. Mortazavi, R. A. Sponseller, J. W. Edmonds. Denitrification in a large river is influenced by geomorphology and denitrifier community structure. BIOGEOMON 2012: The 7th International Symposium on Ecosystem Behavior, Northport, ME, July 2012.

Tatariw, C., E. L. Chapman, J. W. Edmonds. 2011. Exploring Community Dynamics of Denitrifying Bacteria in the Cahaba River. Alabama Water Resource Conference and Symposium, Orange Beach, AL, September 2011. *Second Place, Student Speaker Competition.*

Tatariw, C., E.L. Chapman, J. Jarnigan, R. A. Sponseller, J. W. Edmonds. 2011. Exploring Community Dynamics of Denitrifying Bacteria in the Cahaba River. Annual Meeting of the North American Benthological Society, Providence, RI, May 2011.

SYNERGISTIC ACTIVITES

2022: Facilitator, Mentor Training for UA Dept. of Biological Sciences REU program
Reviewer, National Science Foundation
Participant, Variably Inundated Environments working group
Reviewer, Swiss National Science Foundation
Session Convener, Joint Aquatic Sciences Meeting: Discoveries in ecosystem services provided by human created hydrological systems
Trained facilitator, Center for the Improvement of Mentored Experiences in Research (CIMER) Entering Mentoring curriculum
Facilitator, CERF Rising TIDES (Towards an Inclusive, Diverse, and Enriched Society) Program post-conference professional development workshop

2021: Trained facilitator, Center for the Improvement of Mentored Experiences in Research (CIMER) Entering Research curriculum
Mentor, CERF Rising TIDES Program
Session Convener, CERF Biennial Conference (virtual)
The Scientific and Research Education Network, contributed K12 lesson plan on data literacy

2020: UA Department of Biological Sciences Diversity, Equity, and Inclusion Committee

2019: Mentor, CERF Rising TIDES Program
Session Convener, CERF Biennial Conference

2018: Organizer, DISL Discovery Day Recycled Poster Collage
Organizer, DISL University Programs "Valentines from the Sea" Poetry Contest
Volunteer, UA Biological Sciences ArBOOretum

2017: Organizer, DISL University Programs Recycled Holiday Ornament Competition
Presenter, Dauphin Island Sea Lab Estuarium Boardwalk Talk

2015: Graph of the Week contributor, Acadia Learning for Participatory Science: "How does snowpack affect soil temperature?"
University of Maine Food Systems Alliance

2014: Judge, Maine State Science Fair

2013: Seminar Planning Committee, School of Biology and Ecology, UM

Reviewer: *JGR Biogeosciences, Marine Ecology Progress Series, Environmental Science and Technology, PLOS One*, *Science of the Total Environment*

Professional Societies: American Geophysical Union, Coastal and Estuarine Research Federation

PUBLICITY

Jones, A. 19 September 2022. Small Wetlands the Focus of UA Effort to Boost Resource Management. *The University of Alabama News Center*. https://news.ua.edu/2022/09/small-wetlands-the-focus-of-ua-effort-to-boost-resource-management.

Cutts, E. 05 October 2021. Roadside ditches keep water clean. *National Association of Science Writers Student Newsroom*. https://www.nasw.org/article/roadside-ditches-keep-water-clean.

Parker, B. 12 August 2021. Washing Away Nitrogen Through Roadside Ditches. *Alabama Water Institute News*. http://ovpred.ua.edu/alabama-water-institute/awi-news/washing-away-nitrogen-through-roadside-ditches.

Derouin, S. 04 August 2021. Research Spotlight: Roadside Ditches Are Effective at Nitrogen Removal. *Eos*. https://eos.org/research-spotlights/roadside-ditches-are-effective-at-nitrogen-removal.

Mitchell, J. 10 May 2015. U Maine Students Study Snow-Soil Connection. *Maine Public*. https://www.mainepublic.org/maine/2015-05-10/u-maine-students-study-snow-soil-connection.