

Giovanna McClenachan
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EDUCATION

- Ph.D. **Louisiana State University**, Baton Rouge, LA
Department of Oceanography and Coastal Sciences, 2016
Advisor: R. Eugene Turner
Dissertation Title: Coastal ecosystem resiliency and adaptability after major disturbances.
- B.S. **Dickinson College**, Carlisle, PA
Environmental Science, Magna Cum Laude, 2005

PROFESSIONAL APPOINTMENTS

- 2024-present Assistant Professor in the School of Marine and Atmospheric Sciences
Stony Brook University
- 2020-2023 Assistant Professor of Biology, Nicholls State University, LA
- 2018-2020 Preeminent Postdoctoral Fellow at University of Central Florida
Department of Biology
PI: Linda Walters
- 2016- 2018 Science Director at Coalition to Restore Coastal Louisiana

PUBLICATIONS

*undergraduate student co-author

- 2023 **McClenachan, G.** and R.E. Turner. 2023. Disturbance legacies and shifting trajectories: Marsh soil strength and shoreline erosion a decade after the Deepwater Horizon oil spill. *Environmental Pollution*. <https://doi.org/10.1016/j.envpol.2023.121151>.
- 2023 Bardou, R., M.J .Osland, S. Scyphers,... **G. McClenachan et al.** 2023. Rapidly Changing Range Limits in a Warming World: Critical Data Limitations and Knowledge Gaps for Advancing Understanding of Mangrove Range Dynamics in the Southeastern USA. *Estuaries and Coasts*. <https://doi.org/10.1007/s12237-023-01209-7>.
- 2022 Zengel, S, J. Weaver, I.A. Mendelsohn, S.A. Graham, Q. Lin, M.W. Hester, J.M. Willis, B.R. Silliman, J.W. Fleeger, **G. McClenachan**, N.N. Rabalais, R.E. Turner, A.R. Hughes, J. Cebrian, D.R. Deis, N. Rutherford, B.J. Roberts 2022. Meta - analysis of salt marsh vegetation impacts and recovery: a synthesis following the Deepwater Horizon oil spill. *Ecological Applications*. <https://doi.org/10.1002/eap.2489>.
- 2021 **McClenachan, G.**, M. Witt*, and L. Walters. 2021. Replacement of oyster reefs by mangrove islands: unexpected climate-driven ecosystem shifts. *Global Change Biology*. <https://doi.org/10.1111/gcb.15494>.

- 2021 Walters, L., E. Philips, S. Badylak, **G. McClenachan**, P.E. Sacks, M.J. Donnelly. 2021. A negative association between recruitment of the eastern oyster *Crassostrea virginica* and the brown tide *Aureoumbra lagunensis* in Mosquito Lagoon, Florida. *Florida Scientist*. 84: 81-91.
- 2021 Morris, R., M. La Peyre, B. Webb, D. Marshall, D. Bilkovic, J. Cebrian, **G. McClenachan**, K. Kibler, L. Walters, D. Bushek, E. Sparks, N. Temple, J. Moody, K. Angstadt, J. Goff, M. Boswell, P. Sacks, S. Swearer. 2021. Large-scale variation in wave attenuation of oyster reef living shorelines and the influence of inundation duration. *Ecological Applications*. <https://doi.org/10.1002/eap.2382>.
- 2021 Walters, L. and **G. McClenachan**. 2021. Commentary on Osland et al.: Tropicalization of temperate ecosystems in North America: The northward range expansion of tropical organisms in response to warming winter temperatures. *Global Change Biology*. <https://doi.org/10.1111/gcb.15631>.
- 2020 **McClenachan, G.**, M. Donnelly, P. Sacks, M. Shaffer, and L. Walters. 2020. Does size matter?: Quantifying the cumulative impact of small-scale living shoreline and oyster reef restoration projects on shoreline erosion. *Restoration Ecology*. <https://doi.org/10.1111/rec.13235>.
- 2020 Cannon D, K. Kibler, M. Donnelly, **G. McClenachan**, L. Walters, A. Roddenberry, J. Phagan*. 2020. Hydrodynamic habitat thresholds for mangrove vegetation on the shorelines of a microtidal estuarine lagoon. *Ecological Engineering*. 158: 106070. <https://doi.org/10.1016/j.ecoleng.2020.106070>.
- 2019 Morris, R., D. Bilkovic, M. Boswell, D. Bushek, J. Cebrian, J. Goff, K. Kibler, M. La Peyre, **G. McClenachan**, J. Moody, P. Sacks, J. Shinn, E. Sparks, N. Temple, L. Walters, B. Webb, and S. Swearer. 2019. The application of oyster reefs in shoreline protection: are we over-engineering for an ecosystem engineer? *Journal of Applied Ecology*. 56(7): 1703-1711.
- 2019 Turner R.E., N.N. Rabalais, E.B. Overton, B.M. Meyer, **G. McClenachan**, E.M. Swenson, M. Besonen, M.L. Parsons, and J. Zingre. 2019 Oiling of the continental shelf and coastal marshes over eight years after the 2010 Deepwater Horizon oil spill. *Environmental Pollution*. 252 (B): 1367-1376.
- 2018 Turner, R.E. and **G. McClenachan**. 2018. Reversing wetland death from 35,000 cuts: Opportunities to restore Louisiana's dredged canals. *PloS ONE*. 13 (12), e0207717.
- 2016 Turner, R.E., **G. McClenachan**, and A.W. Tweel. 2016. Islands in the oil: Quantifying salt marsh shoreline erosion after the Deepwater Horizon oiling. *Marine Pollution Bulletin*. 10(1): 316-232.
- 2014 Turner, R.E., E.B. Overton, B.M. Ashton, M.S. Miles, **G. McClenachan**, L. Hooper-Bui, A. Summer Engel, E.M. Swenson, J.M. Lee, C.S. Milan, and H. Gao. 2014. Distribution and recovery trajectory of Macondo (Mississippi Canyon 252) oil in Louisiana salt marshes. *Marine Pollution Bulletin*, 87(1-2): 57-67.
- 2013 **McClenachan, G.**, R.E. Turner, and A.W. Tweel. 2013. Effects of oil on the rate and trajectory of Louisiana marsh shoreline erosion. *Environmental Research Letters*. 8(4): 044030.
- 2012 Kapur, A., C. Baldwin, M. Swanson, N. Wilberforce, **G. McClenachan**, and M. Rentschler. 2012. Comparative life cycle assessment of conventional and Green Seal-compliant industrial and institutional cleaning products. *The International Journal of Life Cycle Assessment*. 17(4): 377-387.

OTHER PUBLICATIONS/REPORTS

- 2023 Lewis, K.A., K. DeMarco, **G. McClenachan**, J. Salerno, K. Thompson. Perspectives from Coastal Ecosystems Through the Lens of Climate Change. Oxford Research Encyclopedia of Climate Science. Accepted.
- 2020 Kibler, K., M. Donnelly, D. Cannon, L. Walters, J. Phagan, **G. McClenachan**, A. Roddenberry. Developing a Shoreline Restoration Suitability Model for North Indian River and Mosquito Lagoon, Phase II. 2020. Indian River Lagoon National Estuaries Program Report IRL2018-017. <https://stars.library.ucf.edu/shorelines>.
- 2017 Miller, C., N. Dixon, Z. Swartz, and **G. McClenachan**. Shrimping with Diversions: Understanding the Resilience of Southeast Louisiana Shrimpers in Response to Large-Scale Ecological Restoration Projects. Coalition to Restore Coastal Louisiana Report. <https://www.crcel.org/wp-content/uploads/2022/07/shrimping-with-diversions.pdf>.
- 2016 **McClenachan, G.** 2016. Coastal ecosystem resiliency after major disturbances. *LSU Doctoral Dissertations*. 3161. https://digitalcommons.lsu.edu/gradschool_dissertations/3161.
- 2014 Hooper-Bui, L.M., N.N. Rabalais, A.S. Engel, R.E. Turner, **G. McClenachan**, B. Roberts, E.B. Overton, D. Justic, K. Sturdivant, K. Brown, and J. Conover. 2014. Key insights into the coastal effects of the Macondo Blowout from the Coastal Waters Consortium: A GoMRI Consortium. International Oil Spill Conference, Savannah, Georgia, 5-8 May, 2014 (1): 604-617.

GRANTS AND FELLOWSHIPS

Pending

- 2024 Lewis, KL., **G., McClenachan**, A. Enriquez, M. Trevino-Pena, C. Schmidt. RAISE: Multi-hazard impacts on nature-based social infrastructure in Southern New England. NSF CHIRRP. **\$996,752**.
- 2024 Lewis, KL., **G., McClenachan**, A. Enriquez, M. Trevino-Pena, C. Schmidt. Expanding shoreline social infrastructure to build coastal community resilience in Southern New England through remote sensing and community-informed science. NASA. **\$811, 952**.

Funded- in progress

- 2023 Willis, J. & **G. McClenachan**. Elucidating the successional trajectories of Louisiana barrier island vegetation communities through data mining. *Louisiana Sea Grant Coastal Science Assistantship Program*. **\$75,000**.

Funded- complete

- 2021 Clay, T. & **G. McClenachan**. Movement patterns of Diamondback Terrapin (*Malaclemys terrapin*) within Barataria Bay (LA). *Louisiana Department of Wildlife and Fisheries: State Wildlife Grants*. **\$208,172**.
- 2021 Willis, J. & **G. McClenachan**. Integrated remote sensing and field based assessments to provide novel insights into climate-driven expansion of *Avicennia germinans* at its northern latitudinal limits. *NASA EpScor*. **\$29,921**.
- 2021 Willis, J., **G. McClenachan**, S. David, J. Whitaker, G. LaFleur, S. Walton, B. Ramachandran, J. Doucet, Q. Fontenot. Ecological and Social Ridge Dynamics in the Barataria-Terrebonne Basins. *Restore Act Center of Excellence*. **\$496,000**.
- 2020 **McClenachan, G.** Mapping small-scale anthropogenic alterations to the Louisiana coastal zone, 1932-present. *Nicholls State University Research Council Grants*. **\$3,225**.

- 2018/19 Kibler, K., L. Walters, M. Donnelly, V. Kitsikoudis, **G. McClenachan**, A. Roddenberry. Developing a Shoreline Restoration Suitability Model for North IRL and Mosquito Lagoon, Phase II. *Indian River Lagoon National Estuary Program*. **\$117,546**.
- 2017 **McClenachan, G.** Fishing for Data: Collecting baseline data on fish populations and environmental conditions in southeastern Louisiana using fishermen citizen scientists. *Restore the Mississippi River Delta*. **\$99,440**.
- 2017 **McClenachan, G.** Oyster reef ecosystem benefits monitored via time-lapse photography. *Restore the Mississippi River Delta*. **\$11,157**.
- 2010-2014 **McClenachan, G.** Board of Regents Graduate Fellowship. *Louisiana Board of Regents*. **\$112,000**.

TEACHING EXPERIENCE

Nicholls State University: Department of Biological Sciences
BIOL 552 Marine and Environmental Biology (Graduate)
BIOL 510 Applied GIS for Biologists (Graduate)
BIOL 483 Coastal Ecology (Split level)
BIOL 284 Intro to Marine Biology Lab (Undergrad)
BIOL 156 Biology II (Undergrad)

University of Central Florida: Department of Biology
PCB 4932 Resilience and Disturbance Ecology, Spring 2019 (Undergrad)

Louisiana State University: Department of Oceanography and Coastal Sciences
Introduction to Oceanography TA, Fall 2015 (Undergrad)
Wetland field workshop, Summer 2013 (Grad)

SYNERGISTIC ACTIVITIES

Guest Editor: *sustainability* (2022): Understanding and Improving Coastal Restoration: Considering Social Dimensions, Ecosystem Services, and Biodegradable Materials.

Conference Committees:

Diversity, Equity, & Inclusion (DEI) subcommittee co-chair of the Coastal Estuarine Research Federation's (CERF) 2021 conference Scientific Program Committee.
DEI Award committee member for CERF 2023 conference.

LaNERR Site Development Committee member: Provide expertise and insight on site choice for Louisiana's first National Estuarine Research Reserve. Headed by Robert R. Twilley.

Creation of Fish for Data App (CRCL): App designed to collect information directly from fishermen on fish species, length, and location. Provides fine scale documentation of fish along varying ecosystems, documenting shifts with climate change.

Journal Reviewer: *Aquatic Invasions, Biological Conservation, Ecosystems, Estuaries and Coasts, Marine Pollution Bulletin, Marine Ecology Progress Series, Remote Sensing, Southeastern Naturalist*

Grant reviewer: National Fellowship of GWIS, Maryland Sea Grant, Alabama RESTORE Act COE, NERR Science Catalyst and Transfer grants

CONFERENCE PRESENTATIONS

Organized Conference Sessions

- 2023 State of the Coast 2023. New Orleans, LA. “Ecological and Social Dynamics of Natural and Restored Coastal Ridges.”
- 2021 State of the Coast 2021. New Orleans, LA (remote). “Marsh Dynamics.”
- 2018 State of the Coast 2018. New Orleans, LA. “Backfilling canals: Progress and Pratfalls.”

Selected Papers Presented

- 2023 Coastal and Estuarine Research Federation Conference. “Storm-induced flooding drives transformation of social ecosystems in American cities.” Portland, OR. Nov 13-17.
- 2019 Coastal and Estuarine Research Federation Conference. “Replacement of oyster reefs by mangrove islands: unexpected climate-driven ecosystem shifts.” Mobile, AL. Nov 3-7.
- 2019 Indian River Lagoon Conference. “Ecosystem trends in Mosquito Lagoon: Are oyster reefs being replaced by mangrove islands?” Fort Pierce, FL, Feb 7, 2019.
- 2018 State of the Coast. “Why isn’t everyone backfilling? History of rationales for the lack of backfilling.” New Orleans, LA. May 30- June 1.
- 2017 Coastal and Estuarine Research Federation Conference. “Salt marsh resiliency shifts after the Deepwater Horizon oil spill.” Providence, RI. Nov 5-9.
- 2017 Gulf of Mexico Oil Spill and Ecosystem Science Conference.
“Salt marsh resiliency shifts after the Deepwater Horizon oil spill.” New Orleans, LA. Feb 6-9.
- 2016 Restore America’s Estuaries Conference.
“Documenting marsh shoreline erosion over days, months and a year: The legacy effects of disturbances.” New Orleans, LA. Dec 12-15.
- 2016 Gulf of Mexico Oil Spill and Ecosystem Science Conference.
“Louisiana commercial fishing industry response to the Deepwater Horizon oil spill.” Tampa, FL. Feb 1-4.
- 2015 Coastal and Estuarine Research Federation Conference.
“Coastal erosion and disturbances: Documenting the impact of micro-bay formation.” Portland, OR, November 7-12.
- 2015 Gulf of Mexico Oil Spill and Ecosystem Science Conference.
“Rate and trajectory of erosion along the Louisiana coast after the Deepwater Horizon oil spill.” Houston, TX, February 16-19
- 2015 Student Conference on Conservation Science.
“Effects of oil on the rate and trajectory of Louisiana marsh shoreline erosion.” Brisbane, Australia, January 19-29.
- 2013 Coastal and Estuarine Research Federation Conference.

“Louisiana commercial fishing industry response to the Deepwater Horizon oil spill.” San Diego, CA. November 3-7.

- 2013 Association for the Sciences of Limnology and Oceanography (ASLO).
“Effects of oil on the rate and trajectory of Louisiana marsh shoreline erosion.” New Orleans, LA. February 17-22.
- 2013 Gulf of Mexico Oil Spill and Ecosystem Science Conference.
“Effects of oil on the rate and trajectory of Louisiana marsh shoreline erosion.” New Orleans, LA. January 21-23.
- 2012 International Wetlands Conference (INTECOL).
“Effects of oil on the rate and trajectory of Louisiana marsh shoreline erosion.” Orlando, FL. June 3-8.
- 2011 Coastal and Estuarine Research Federation Conference.
“Effects of oil on the rate and trajectory of Louisiana marsh shoreline erosion.” Daytona Beach, FL. November 6-11.

SCIENCE OUTREACH AND MENTORING

- 2020- present **Graduate & undergraduate mentor and advisor.** Nicholls State University.
Mentoring Master’s students and undergraduates in independent research in coastal ecosystems.
- 2018- present **Poster Judge**
Gulf Estuarine Research Society conference (2022)
Nicholls State University Undergraduate & Graduate research symposium (2021)
University of Central Florida Undergraduate research symposium (2018-2019)
- 2018-2020 **Undergraduate mentor and advisor.** University of Central Florida
Mentored undergraduates in independent research in coastal lagoon work.
- 2017 **AmeriCorps supervisor.** Coalition to Restore Coastal Louisiana
Mentored and supervised a graduate student in GIS research.
- 2017 **Undergraduate research mentor.** Tulane University
Worked with 2 students using GIS to explore restoration effects.
- 2013-2015 **Ocean Commotion.** Louisiana State University
Developed and presented science education for elementary and middle schoolers
- 2011-2015 **Environmentors.** Louisiana State University
Yearlong science mentoring for underprivileged high school students.

AWARDS

- 2016 Outstanding Dissertation Award, Dept. of Oceanography and Coastal Sciences, LSU.
- 2015 Ted Ford Scholarship Award, Dept. of Oceanography and Coastal Sciences, LSU.
- 2014 Gulf of Mexico Research Initiative Scholar, Coastal Waters Consortium.

2014 1st place, 2014 Graduate Student Seminar Competition, Dept. of Oceanography and Coastal Sciences, LSU.

2005 1st place, Senior Research Symposium, Dickinson College.

RELEVANT WORK EXPERIENCE

2007-2010 Environmental Scientist, Green Seal, Washington, DC.

2006-2007 Associate Research Support Specialist, Institute of Ecosystem Studies, Baltimore, MD.

2005-2006 Assistant Research Specialist, Institute of Ecosystem Studies, Baltimore, MD.