Creating a Pathway for Coastal Sustainability: The Vital Importance of Early Engagement in Coastal-Deltaic Challenges

(A MissDelta Session)

May 21, 2025

MISS DELTA
Mississippi River Delta Transition Initiative

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What is the Mississippi River Delta Transition Initiative (MissDelta)?

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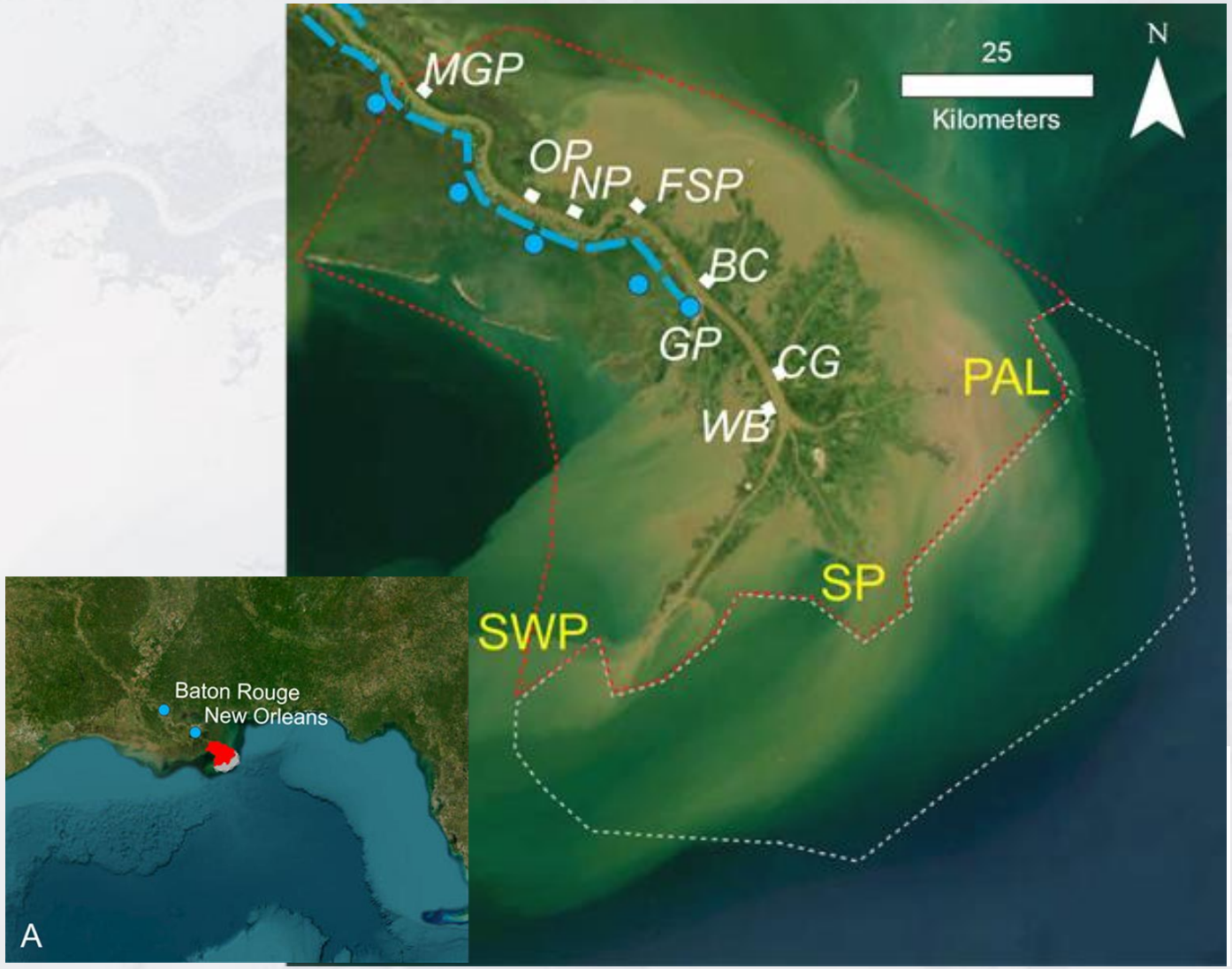
Mississippi River Delta Transition Initiative (MissDelta)

- This initiative seeks to explore the geomorphic and human future of the Birdsfoot Delta of the Mississippi and surrounding region, and to expand the diversity of the coastal scholar community.
- Funded by the Gulf Research Program of the National Academies of Science, Engineering, and Medicine.



Mississippi River Delta Transition Initiative (MissDelta)

- The MissDelta Consortium contains 14 different institutions and over 50 researchers who will work with stakeholders from the community, industry, and government to identify important questions and scenarios to evaluate impacts of possible outcomes.

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Workforce Diversity Initiative

- Broaden the diversity and number of scholars working on coastal-deltaic issues in the Gulf of Mexico region and seek to diversify the representation of experts, at both the individual and the institutional level throughout various groups (research, education, and outreach) within the Initiative.

- Research reported in this presentation was supported by the Gulf Research Program of the National Academies of Sciences, Engineering, and Medicine under award number SCON – 10000883.
- The content is solely the responsibility of the authors/panelists and does not necessarily represent the official views of the Gulf Research Program or the National Academies of Sciences, Engineering, and Medicine.

Let's Meet Our Panelists

Our Panelists

- Panel Chair: Dr. Barb Kleiss, co-PI for MissDelta, Tulane University
- Dr. Mitchell “Mitch” Andrus, P.E., Royal Engineers and Consultants
- Dr. Brendan Yuill, Army Corps of Engineers
- Dr. Michelle Sanchez, Workforce Diversity Initiative co-PI for MissDelta, Tulane University
- Christie Landry, LaSTEM Region 3 Director, Fletcher Technical Community College
- Faith Walton, LSU PhD Student
- Brooklyn Carter, Jackson State University Undergraduate Student

Dr. Barb Kleiss, Research Professor, Tulane

While Dr. Kleiss has worked throughout the United States, her career has focused on the rivers and wetlands in the lower Mississippi River valley. These efforts have been as varied as studies to understand sediment deposition and nitrogen dynamics in bottomland hardwood wetlands in Mississippi River tributaries, to sampling the water chemistry, ecology and groundwater to over forty rivers in the Mississippi Embayment, helping to develop Level IV ecoregions for the lower Mississippi Valley, and coordinating studies to assess the efficacy of river diversions.

In the most recent couple of decades, she have been involved in creating, developing and directing large interdisciplinary research programs associated with the Mississippi River and its delta, including serving as the Chief of the US Geological Survey's National Water Quality Assessment Program's Mississippi Embayment project, and the Director of both the Louisiana Coastal Area Science and Technology program and the US Army Corps of Engineer's Mississippi River Geomorphology and Potamology program.

Dr. Mitch Andrus, Executive Vice President, Royal Engineers and Consultants, LLC

Dr. Andrus has over 27 years of experience and directs all coastal and environmental engineering efforts for the company. Much of his design and management experience includes dredging, marsh creation, shoreline protection, and diversion projects. His specific research pursuits have focused on sediment transport, deltaic geology, and sustainability of coastal projects with respect to cost, benefits, and long-term management strategies. He holds a B.S. in Civil and Environmental Engineering, M.S. in Oceanography & Coastal Sciences, and a Ph.D. in Geology & Geophysics all from Louisiana State University.

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Dr. Brendan Yuill, Army Corps of Engineers

Dr. Brendan Yuill is a hydrologist with the U.S. Army Corps of Engineers, New Orleans District. His interest broadly lie in geomorphology and river engineering. After getting degrees at Boston University, Wyoming, and Arizona, he came to New Orleans to work with Denise Reed on coastal subsidence at UNO as a post-doc. Prior to joining the USACE in 2022, he worked at The Water Institute of the Gulf and Engineer Development and Research Center. In his current position, he supports Water Management and Operations of the Lower Mississippi River.

Dr. Michelle Sanchez, Tulane University

Dr. Michelle Sanchez is the Associate Dean for Community Engagement and Academic Partnerships for the Tulane School of Science and Engineering. She is a Senior Professor of Practice in Engineering Physics and the Director of the Tulane Center for K-12 STEM Education. She is native New Orleanian and is a Tulane University alumna with a Bachelor of Science in Engineering and a Master of Science. Michelle received the Ph.D. degree from the Department of Electrical Engineering at Stanford University.

Dr. Sanchez is the co-Pi for the MissDelta Workforce Diversity Initiative. Her goal as the Director of the Tulane Center for K-12 STEM Education is to connect Tulane and the New Orleans community, engage local students through hands-on experiences in Science, Technology, Engineering, and Math (STEM), and inspire confidence in the next generation of leaders and learners.

Christie Landry, Fletcher Technical Community College

Christie Landry is the Director of BayouSTEM, the LASTEM Region 3 STEM Center. BayouSTEM is focused on expanding access to high-quality STEM education and workforce development across South Louisiana. With a strong foundation in science and a deep commitment to community engagement, Christie has played a key role in uniting educators, industry leaders, and regional partners to build a more inclusive and future-ready STEM ecosystem.

She holds a Bachelor of Science in Biology from Nicholls State University and a Master of Science in Biology from Southeastern Louisiana University. Christie has co-authored several peer-reviewed publications in the fields of reproductive and environmental biology, and microbiology, contributing to the broader scientific understanding of Louisiana's unique natural environments.

In her role with BayouSTEM, Christie has led the development of programs that provide hands-on STEM learning for students, professional development for educators, and alignment between educational pathways and local workforce needs, with specific focus on coastal restoration, coastal issues, and coastal sciences. Her work is grounded in the belief that all students—regardless of geography or background—deserve access to engaging, real-world STEM opportunities.

Faith Walton, Louisiana State University

Faith is a PhD student in the Department of Geology and Geophysics at LSU. She is studying the offshore, subaqueous Birdfoot delta to determine how the foundations of the delta are changing and at what rate. Faith has been passionate about science outreach since her undergraduate experience and has been involved in many outreach-based organizations and events throughout her collegiate career. She is currently Co-Chair of the student-led SEA Committee, a MissDelta committee focused on connecting MissDelta students at all levels to each other and to outreach opportunities.

Brooklyn Carter, Jackson State University

Brooklyn is a senior Earth System Science major at Thee Jackson State University and a student researcher supported by the NSF GEOPaths Program.

She hails from Grand Rapids, Michigan, a beautiful community with captivating scenery and natural environments that have inspired and fueled her deep curiosity about the natural world.

Brooklyn participated in the first MissDelta REU, where she had the opportunity to act as the first author on a project titled “Geomorphology and Bathymetric Changes on the Mississippi River Delta Front Using GIS.”

Her research focuses on the dynamic processes shaping our planet, with an emphasis on atmospheric, sedimentary, and coastal systems and how they reflect Earth’s continual evolution.

In addition to her academic pursuits, Brooklyn is committed to serving her campus and community. She represents Jackson State as a student leader and executive board member of Spectrum, is a member of Alpha Phi Omega National Service Fraternity Inc., First-Gen Scholars, and the Ocean Explorers Club, and serves as an ambassador for the Mississippi Chapter of the Association for Women Geoscientists. She is also set to earn her bachelor's degree this December 2025.

Panel Discussion

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Questions?

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