JASON CUROLE, PH.D.

Vice President for Applied Research

Jason Curole, Ph.D., Vice President for Applied Research, has over two decades of experience in numerous areas, including project management, data science, ecological monitoring, business intelligence, financial modeling, and large-scale coastal restoration.

Born and raised in New Orleans, Jason's work includes managing large-scale Louisiana coastal restoration projects with total budgets ranging from $4 to $242 million, developing innovative and data-driven methods for evaluating the success of restoration projects, and extensive experience in managing projects from development to construction. He is skilled in handling both scientific and financial data and extracting novel insights from either.

While at the Institute, Jason has pioneered work in several disciplines, including: SmartPort, a project using crowd-sourced data and AI/ML to predict bathymetry which resulted in the Institute's first patent; the digital transformation of project management, finance, and business intelligence through automation, custom analytics, and tailored dashboards; founding the Project Management Office and organically building the team to seven staff, recruiting several highly-qualified senior project managers to the Institute; co-leading the effort to bring an eDNA/metagenomics expert to the Institute to gain a better understanding of the microbial populations along Louisiana's coast.

Jason is an innovative thinker and proven leader with a dynamic skill-set and has been called within the Institute a "swiss army knife unicorn."

PROFESSIONAL EXPERIENCE

2024–Present: Vice President, The Water Institute
2021–2024: Director of Project Management, The Water Institute

2018–2021: Maritime and Coastal Business Group Leader, GHD

2013–2018: Project Manager, Louisiana Coastal Protection and Restoration Authority
2013: Supervisor, Louisiana Coastal Protection and Restoration Authority
2011–2013: Coastal Resource Scientist, Louisiana Coastal Protection and Restoration Authority
2003–2008: Postdoctoral Researcher, University of Southern California

2003: Postdoctoral Researcher, University of California Davis

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ORGANIZATION ROLE

Vice President for Applied Research

PROJECT ROLE / FOCUS AREAS

Project management

Advanced analytics

R expert

Business Intelligence

Financial modeling

Metagenomics/eDNA

Large-scale coastal restoration, remediation, and protection

EDUCATION

Ph.D., Genetics, University of New Hampshire, 2003

MS, Zoology, Louisiana State University, 1997

BS, Zoology, Louisiana State University, 1995

PROFESSIONAL MEMBERSHIP

Project Management Professional, Project Management Institute

SELECTED PROJECTS

SmartPort. *Economic Development Agency. (2021–2024).* The first crowd-sourced data, AI/ML project undertaken by the Institute used crowd-sourced depth data from a fleet of vessels on the Mississippi River to predict bathymetry along the river. Using a unique approach, the Institute collected over 1 billion crowd-sourced water depths, filtered these for artifacts using AI/ML, and converted these to bed elevations. Using this novel bed elevation data the team produced novel insights on the bedform evolution of the Mississippi River and were able to predict bedform changes. Resulted in the Institute's first patent application.

Savannah Harbor Expansion Project. *USACE, Savannah District. (2020–2021).* Dr. Curole invented and coded a custom algorithm to analyze oxygen data from numerous USGS gages (millions of observations) conclusively showing that the Savannah Harbor Expansion Project oxygen injection Test Run successfully increased oxygen levels in the Savannah River, a requirement of the project's mitigation plan. In addition, Dr. Curole has supported the hydraulic and water quality modeling.

Mitigation of Coastal Erosion Hot-Spots. *Miami-Dade Division of Environmental Resources Management, Miami-Dade County, Fl. (2019).* Analyzed decades of wave data to identify an "average" year for the purposes of transport modeling. The team was tasked with performing sediment transport modeling to evaluate coastal erosion hotspots along the coast. As part of the effort to identify an average year for modeling, Dr. Curole analyzed decades of WIS wave data to determine which year was most similar to the overall average. These results were used to justify the choice of an average year.

Section 404 Assumption Endangered Species Act Programmatic Consultation. *Florida Department of Environmental Protection. (2020).* Dr. Curole served as the senior data scientist for the preparation of a biological assessment (BA) for the state of Florida. The BA was required as part of the state of Florida's application to assume the Clean Water Act Section 404 Program. Dr. Curole analyzed years of permitting data to estimate the frequency of the 236 endangered, threatened, candidate, and under review species in the state of Florida, to better understand the potential effects of state assumption of section 404 permitting. The effort included coordination with USFWS, USEPA, and multiple state agencies in addition to the client

Hamriyah Port Expansion. *Sharjah Port Authority. (2019).* Dr. Curole served as the senior data scientist for a community analysis of infaunal data for an environmental baseline study for a port expansion.

SELECTED PUBLICATIONS

1. T. Curruthers et. al. (43 authors in total), Leaving less carbon on the table – critical science gaps and policy needs to establish a fiscally viable carbon crediting mechanism for coastal herbaceous wetlands, Frontiers in Environmental Science, *in review*

2. Curole, J., Meyer, E., Manahan, D.T., Hedgecock, D., Unequal and Genotype-Dependent Expression of Mitochondrial Genes in Larvae of the Pacific Oyster *Crassostrea gigas*, The Biological Bulletin (2010)

3. B. Ding, B, Curole, J, Husemann, M, and Danley, PD, Habitat complexity predicts the community diversity of rock-dwelling cichlid fish in Lake Malawi, East Africa, Hydrobiolgia (2015)

4. Brown, K, and Curole, J, Longitudinal changes in the mussels of the Amite River: endangered species, effects of gravel mining, and shell morphology, Conservation and Management of Freshwater Mussels (1997)

5. Curole, J, Foltz, D, and Brown, K, Extensive allozyme monomorphism in a threatened species of freshwater mussel, Margaritifera hembeli Conrad (Bivalvia: Margaritiferidae), Conservation Genetics (2004)

6. Curole, J, Universal primers for the specific amplification of the male mitotype of the Unionoidea (Bivalvia), Conservation Genetics (2004)