

# The Future of the Birdsfoot Delta Region: Overview of the Mississippi River Delta Transition Initiative (MissDelta)



<https://www.missdelta.org/>

**Mead Allison**

Dept. of River-Coastal Science & Engineering  
Tulane University





# The Future of the Birdsfoot Delta Region: Overview of the Mississippi River Delta Transition Initiative (MissDelta)



<https://www.missdelta.org/>

## Talk Objectives:

- What is MissDelta and why do we need it?





# What is MissDelta?

*Answering the 21<sup>st</sup> Century Inundation  
Challenge in South Louisiana*



NATIONAL  
ACADEMIES

Sciences  
Engineering  
Medicine



Gulf Research Program Awards \$22 Million to Launch New 'Mississippi River Delta Transition Initiative' Consortium

**News Release | November 1, 2023**

WASHINGTON — The Gulf Research Program (GRP) of the National Academies of Sciences, Engineering, and Medicine has awarded \$22 million to fund a transformative new research consortium focused on advancing understanding of the future sustainability of the lowermost Mississippi River Delta, known as the Bird's Foot Delta. Over five years, the Mississippi River Delta Transition Initiative (MissDelta), led by a partnership between Louisiana State University and Tulane University, will work to transform understanding of the delta's future through the end of the century and **advance research and practical ways to combat land and ecological losses.**



# 2023 Louisiana Coastal Master Plan

**PRESENT**  
**THINKING**

## CLIMATE DRIVERS



SEA LEVEL  
RISE (SLR)



AVG. STORM  
INTENSITY



PRECIPITATION



TRIBUTARY  
FLOW



EVAPO-  
TRANSPIRATION



TEMPERATURE

## OTHER DRIVERS



SUBSIDENCE



MISSISSIPPI RIVER  
HYDROLOGY

HIGHER  
SCENARIO

+2.5 FT by  
Year 50

+10% over  
50 years

Following more severe climate change  
pathway, to co-vary with SLR curve

Higher rates,  
by ecoregion

Moderate  
change

LOWER  
SCENARIO

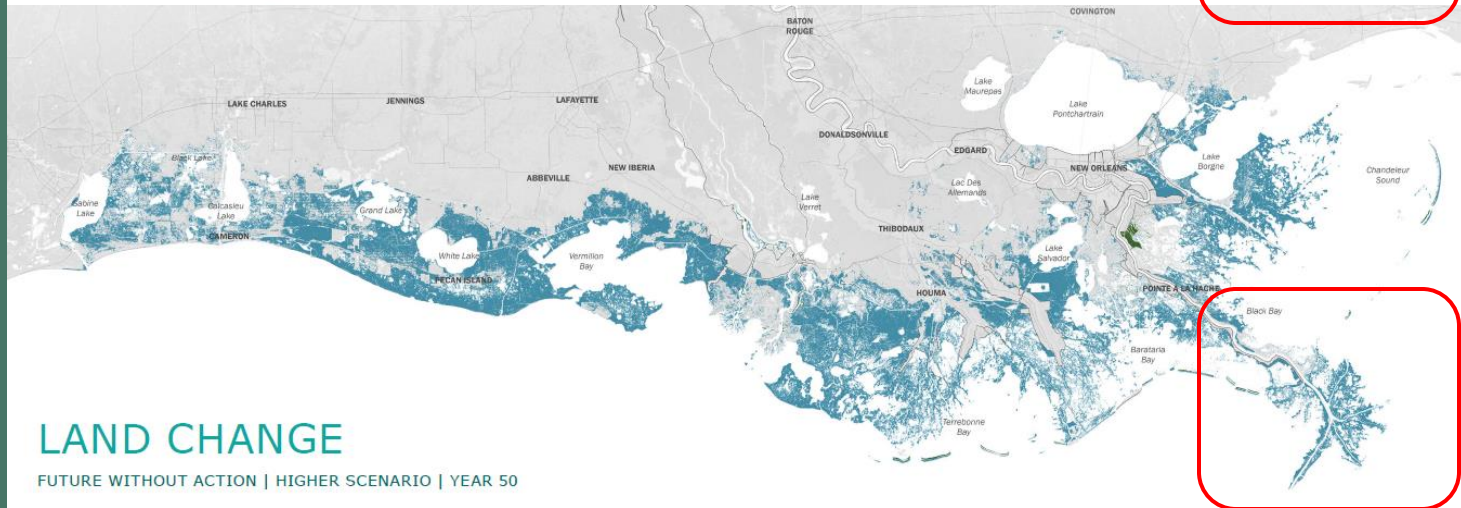
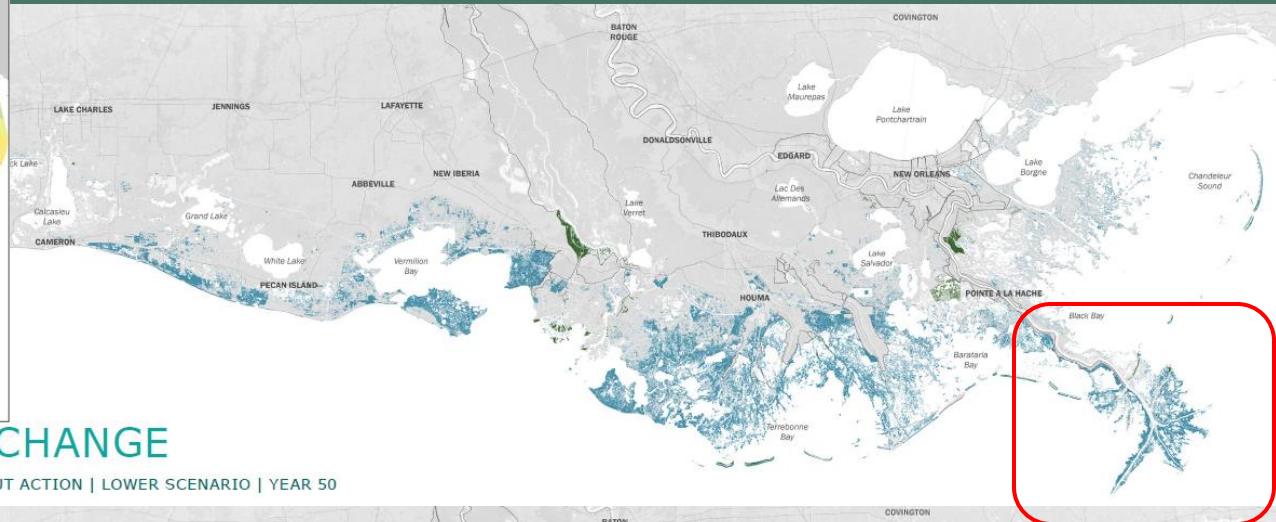
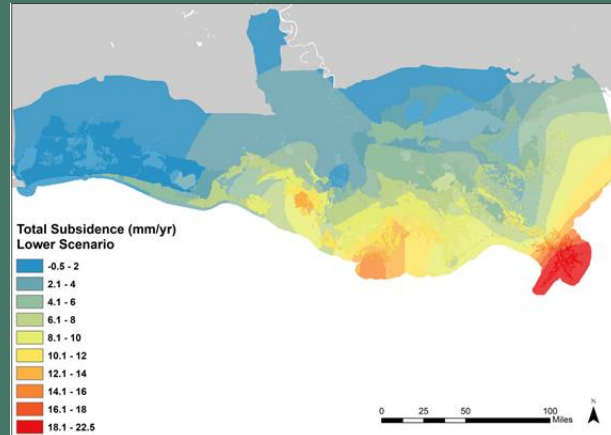
+1.6 FT by  
Year 50

+5% over  
50 years

Following moderate climate change  
pathway, to co-vary with SLR curve

Lower rates,  
by ecoregion

Moderate  
change

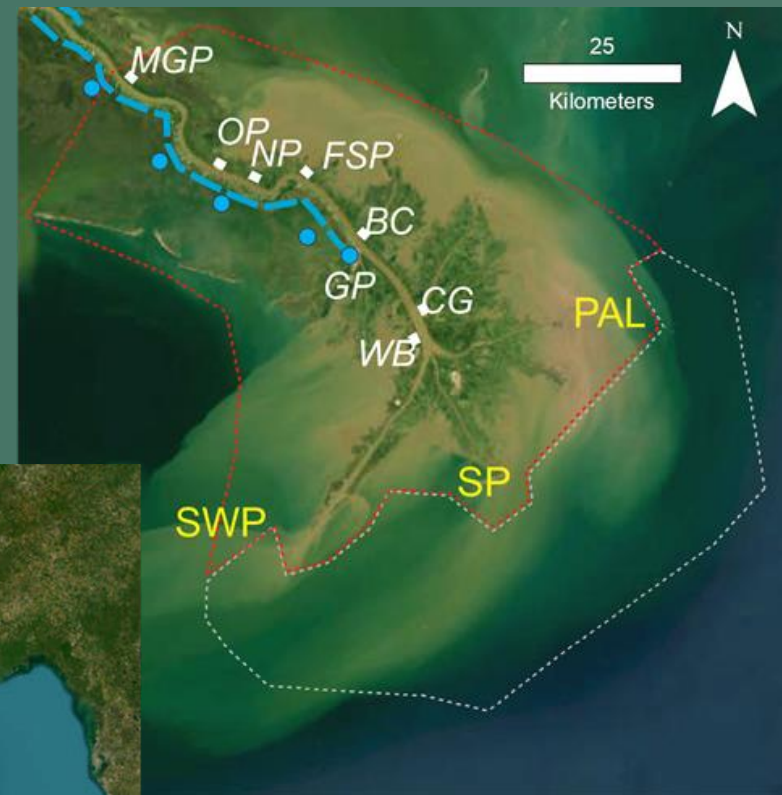




# The Mississippi Birdsfoot Delta is the most threatened coastal region in the Gulf of Mexico, and it is among the most at-risk regions globally

- Deep Draft Mississippi River Nav Channel Supports Nation's Largest Port System
- Commercial/Recreational Fisheries Closely Linked to Mississippi River Inputs
- Major Infrastructural Support for Hydrocarbon Extraction and Future Green Energy Initiatives Offshore
- Storm Buffer for Inland Communities Including Metro New Orleans
- Distinct Ecosystems Even within the Mississippi Delta

# What is the MissDelta area of interest?





# MissDelta's Team



14 Institutions  
38 Principal Investigators

SEPTEMBER 14, 2022

# MissDelta's Four Objectives

**Future Projections to 2100:** New Generation Predictive Models and Strategic Observational Studies to Address Knowledge Gaps (Basin, Delta, Gulf)

**Screen Management Alternatives:** What can we do to forestall negatives?

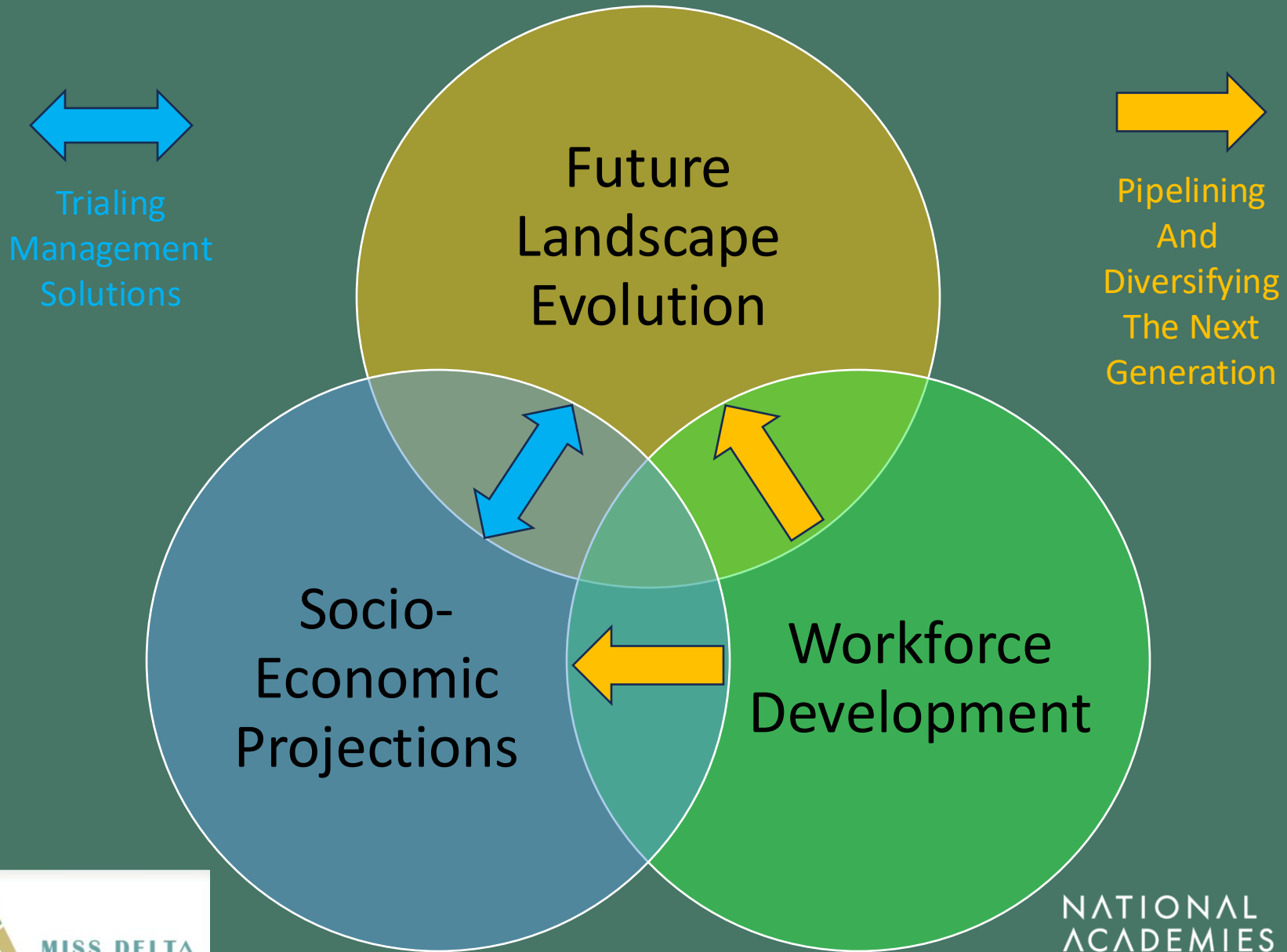
**Socio-Economic Impact:** State-of-the-art projections

**Workforce Development:** Creating the next generation of regional problem solvers whose demographics reflect those of the people of the Gulf Coast.



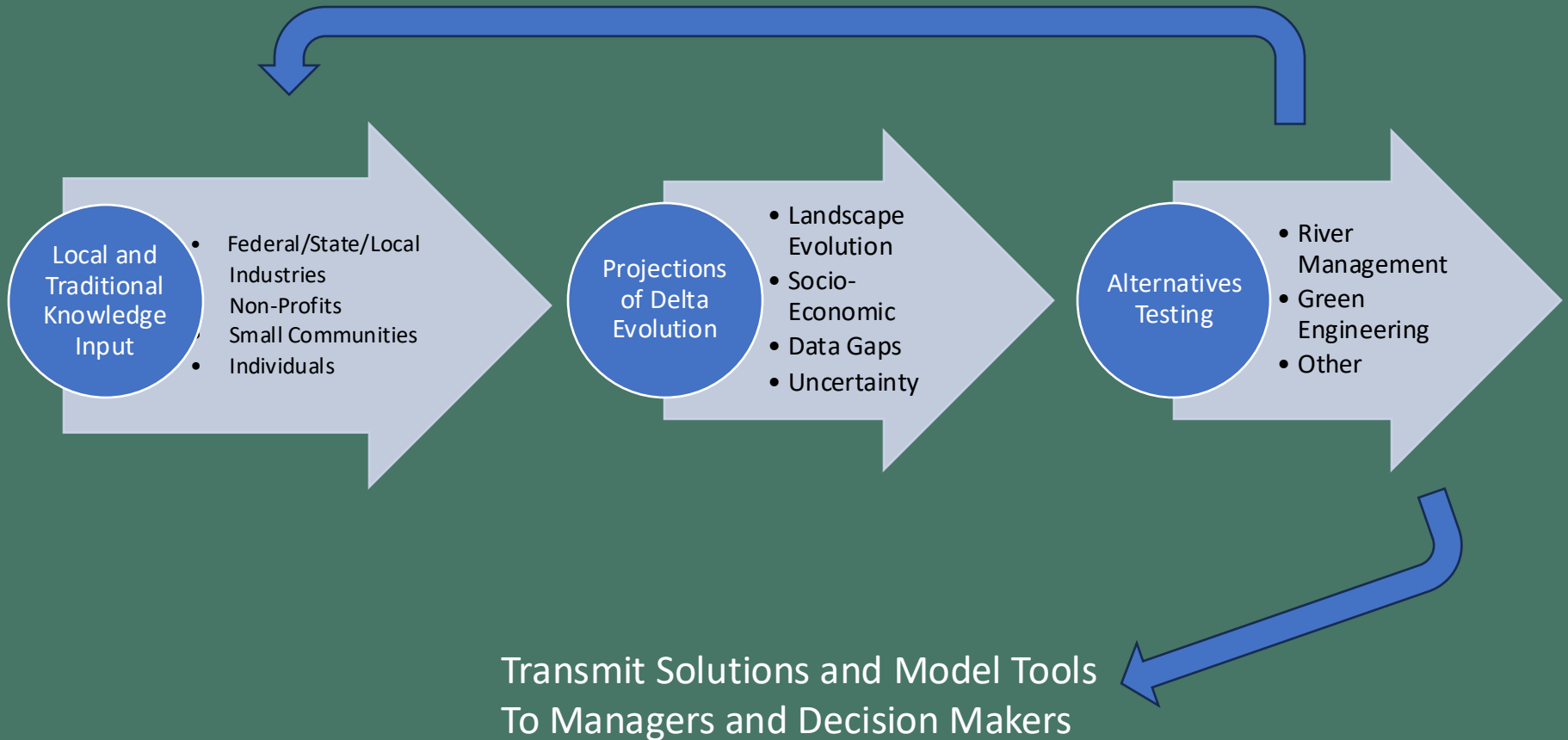


# The Mississippi River Delta Transition Initiative (MissDelta)



# The Mississippi River Delta Transition Initiative (MissDelta)

## Co-Production Strategy



To Follow MissDelta's Progress:  
[Missdelta.org](https://Missdelta.org)  
State of the Coast (May 20-22, 2025)







# THANK YOU!

