MS River Sediment Diversions: Fall 2015 Recommendation

Bren Haase, CPRA

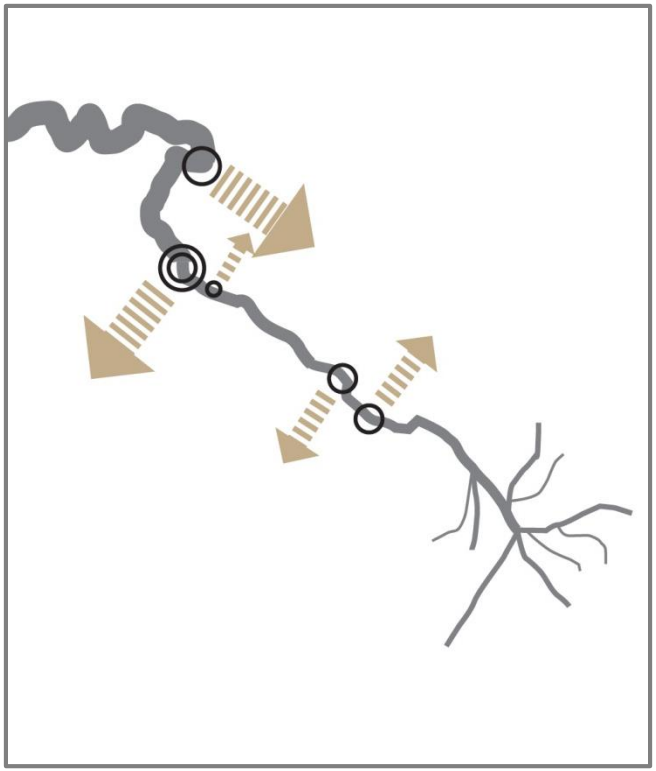
Presentation to the Expert Panel on
Diversion Planning and Implementation

Meeting #6
October 27, 2015

committed to **our coast**

Implementing Diversions in the Master Plan

Mississippi Sediment Diversions



Diversion	Size	Status
Mid-Barataria Sediment Diversion	50,000 cfs	Engineering and Design (E&D)
Mid-Breton Sediment Diversion*	35,000 cfs	Project Planning
Lower Barataria Sediment Diversion	50,000 cfs	Project Planning
Lower Breton Sediment Diversion	50,000 cfs	Project Planning
Upper Breton Sediment Diversion	250,000 cfs	Project Planning

*Mid-Breton Sediment Diversion capacity has been modified from a 5,000 cfs diversion which operated nearly year-round, to a 35,000 cfs diversion which is pulsed during peak flood events.

Diversion Planning Milestones

2012 - Present

2012 – Coastal Master Plan unanimously approved

2013 – Funding made available for diversions

- E&D funds for Mid Barataria approved in FY14 Annual Plan
- DWH criminal settlement directs $1.272B to NFWF for barrier islands and diversions in LA.

– Solicitation of views initiated for Mid Barataria

– Diversion Expert Advisory Panel established

– NFWF funds obligated for LMR sediment diversion planning

2014 – Suite of diversion studies underway

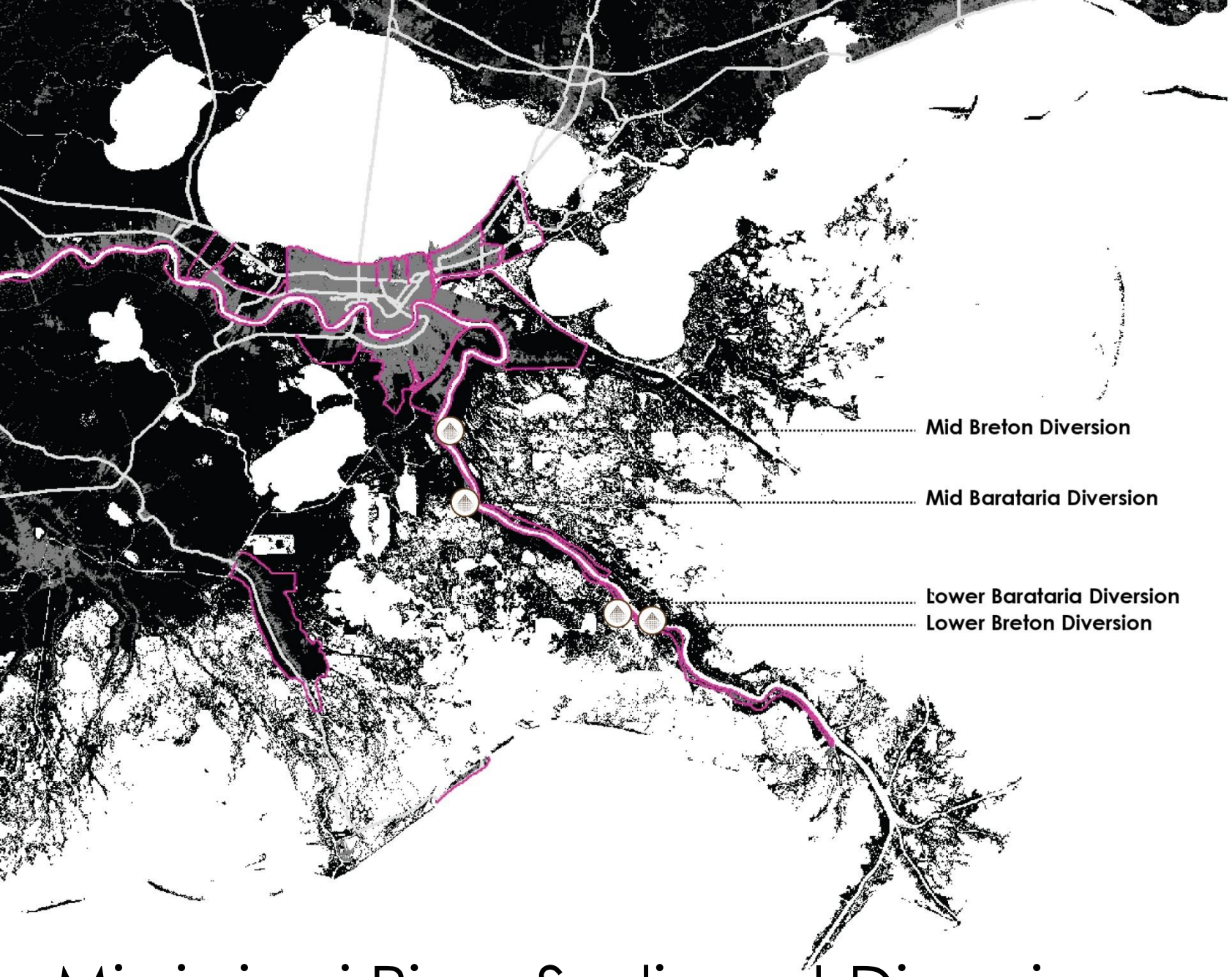
2015 – CPRA recommendation to advance

Addressing Stakeholder Concerns

- Is there enough sediment in the river?
- How long will it take to build land?
- Will there be impacts on navigation?
- Will there be flooding / increased water levels?
- Can storm surge risk be reduced?
- How will fisheries be impacted (displacement, fisheries kills, loss of livelihoods)?
- How will nutrients / invasive species be affected?
- Is dredging more efficient than diversions?
- Operations?

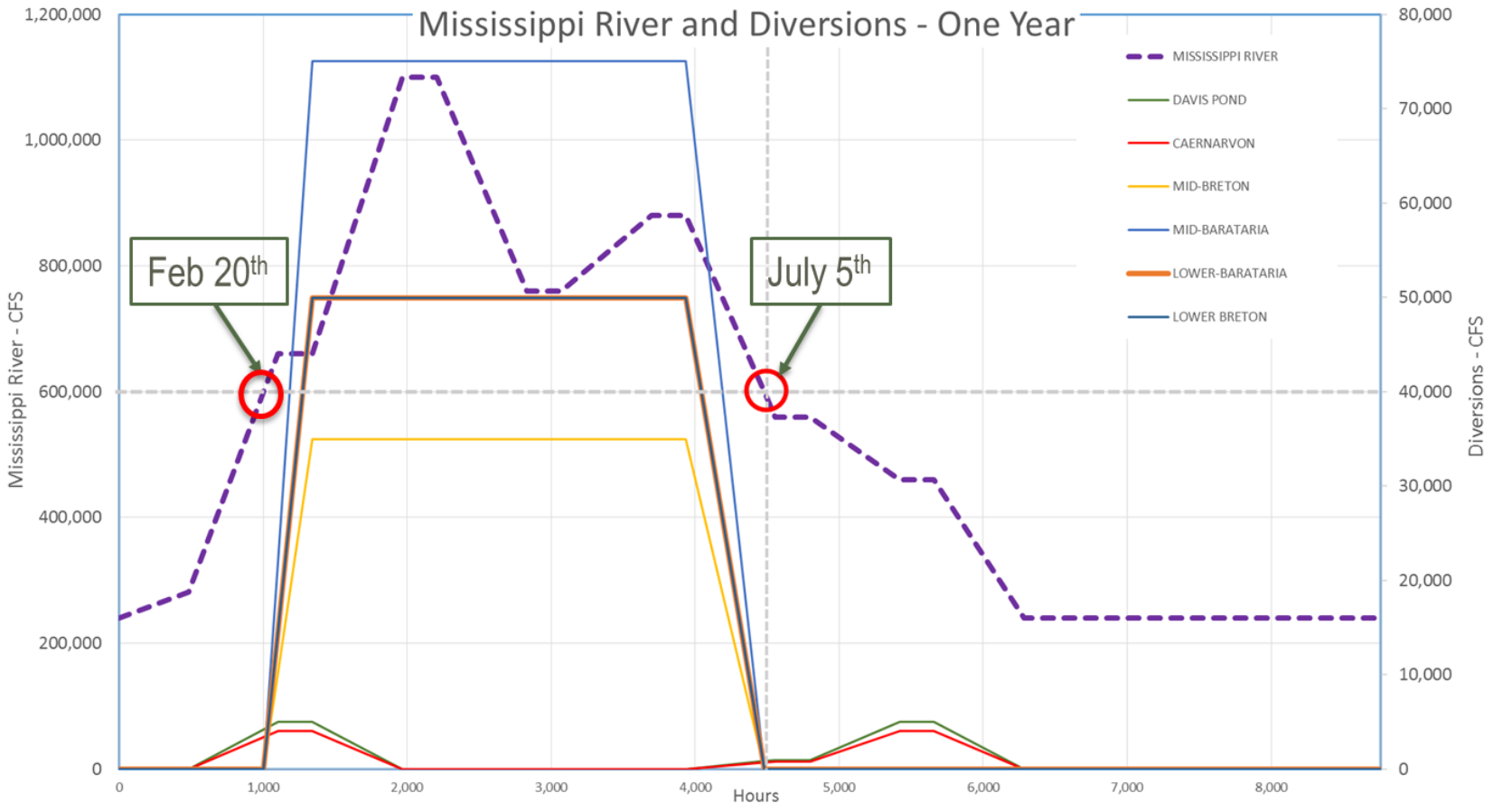
Key Considerations

Decision Driver	Metrics	Evaluation
Land	Wetland Acres	Land built and/or maintained
River	Water levels, velocity, sediment transport	Flood protection, navigation, freshwater supply
Communities	Flood risk reduction, jobs, economic trends by sector, ecosystem services	Vulnerability, cohesion, resilience
Habitat	Salinity, vegetation, and water quality	Quality and diversity
Fish	Biomass by species and location	Abundance and distribution
Other Factors	--	Cost, funding availability, short term vs. long term effects, public acceptance



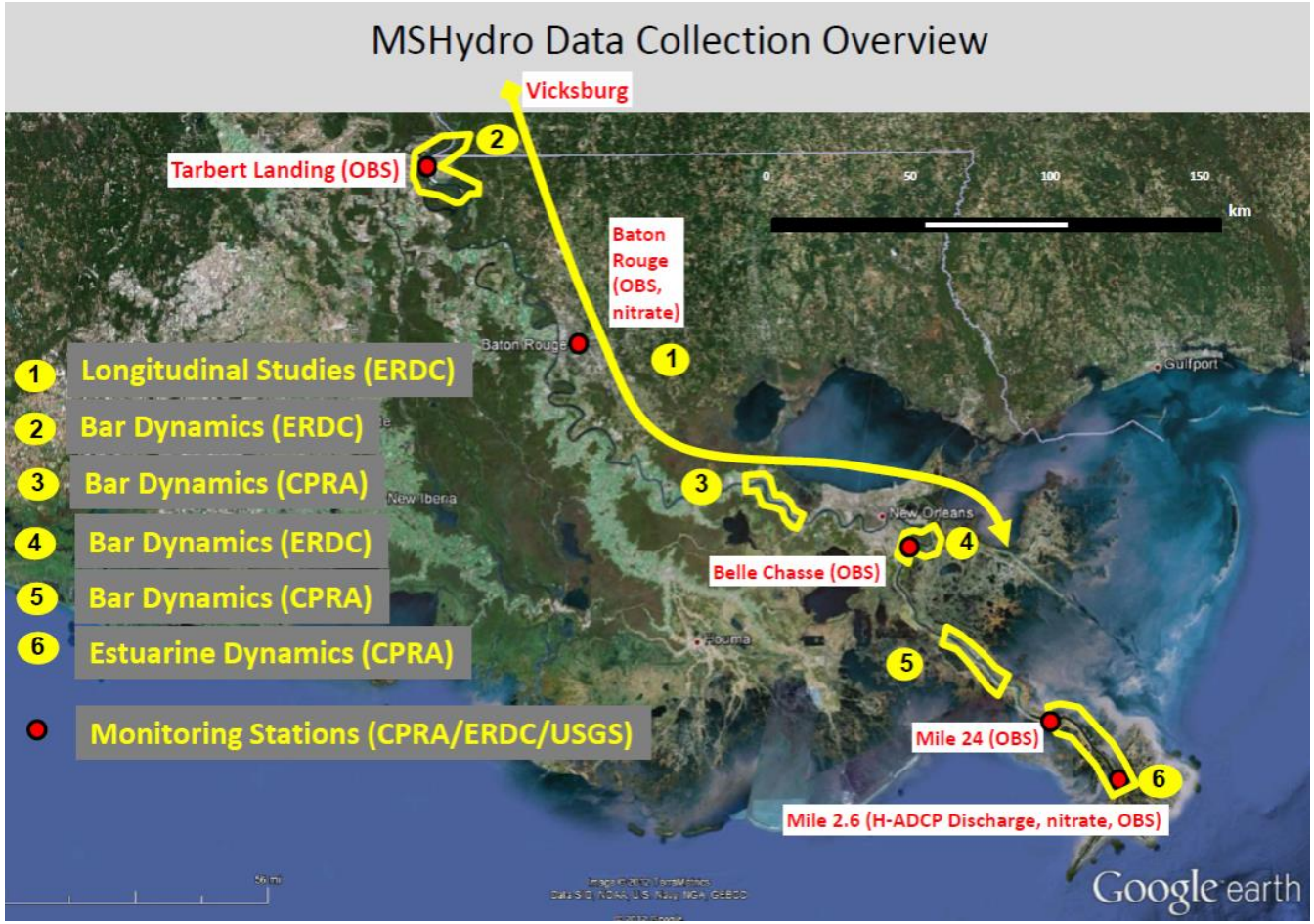
Mississippi River Sediment Diversions

Model Hydrographs

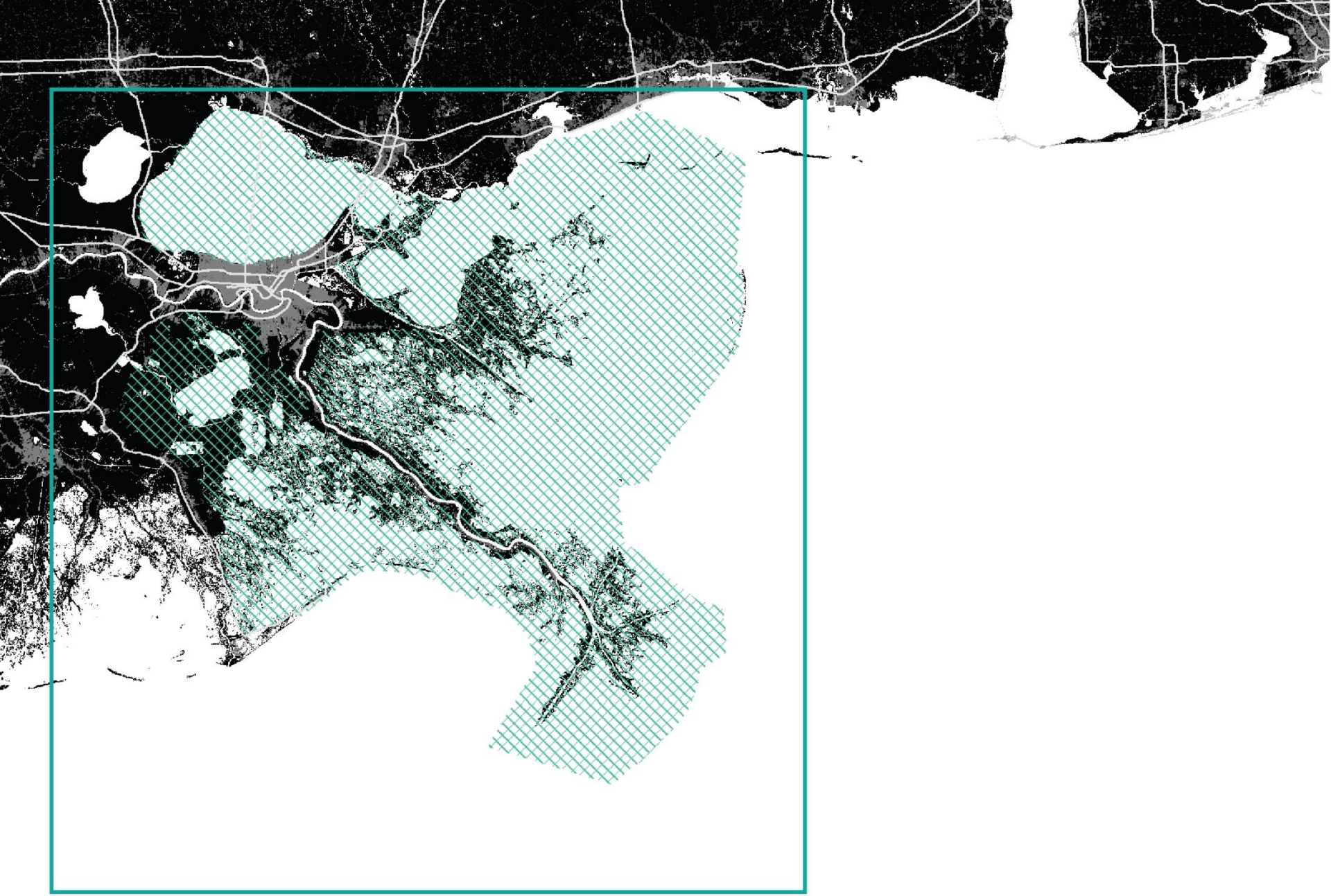


Sediment in the River

MS River Hydrodynamic and Delta Management Study

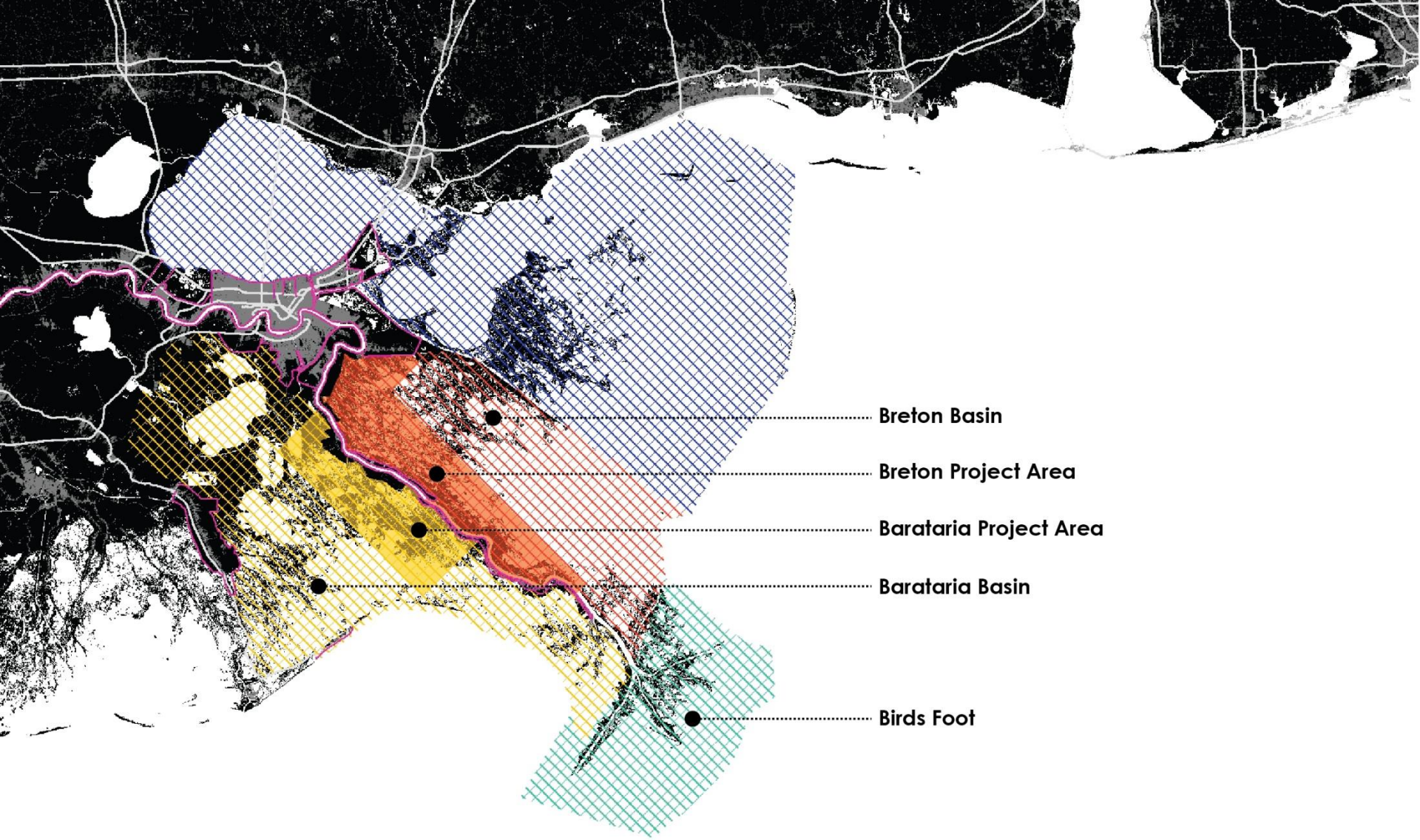


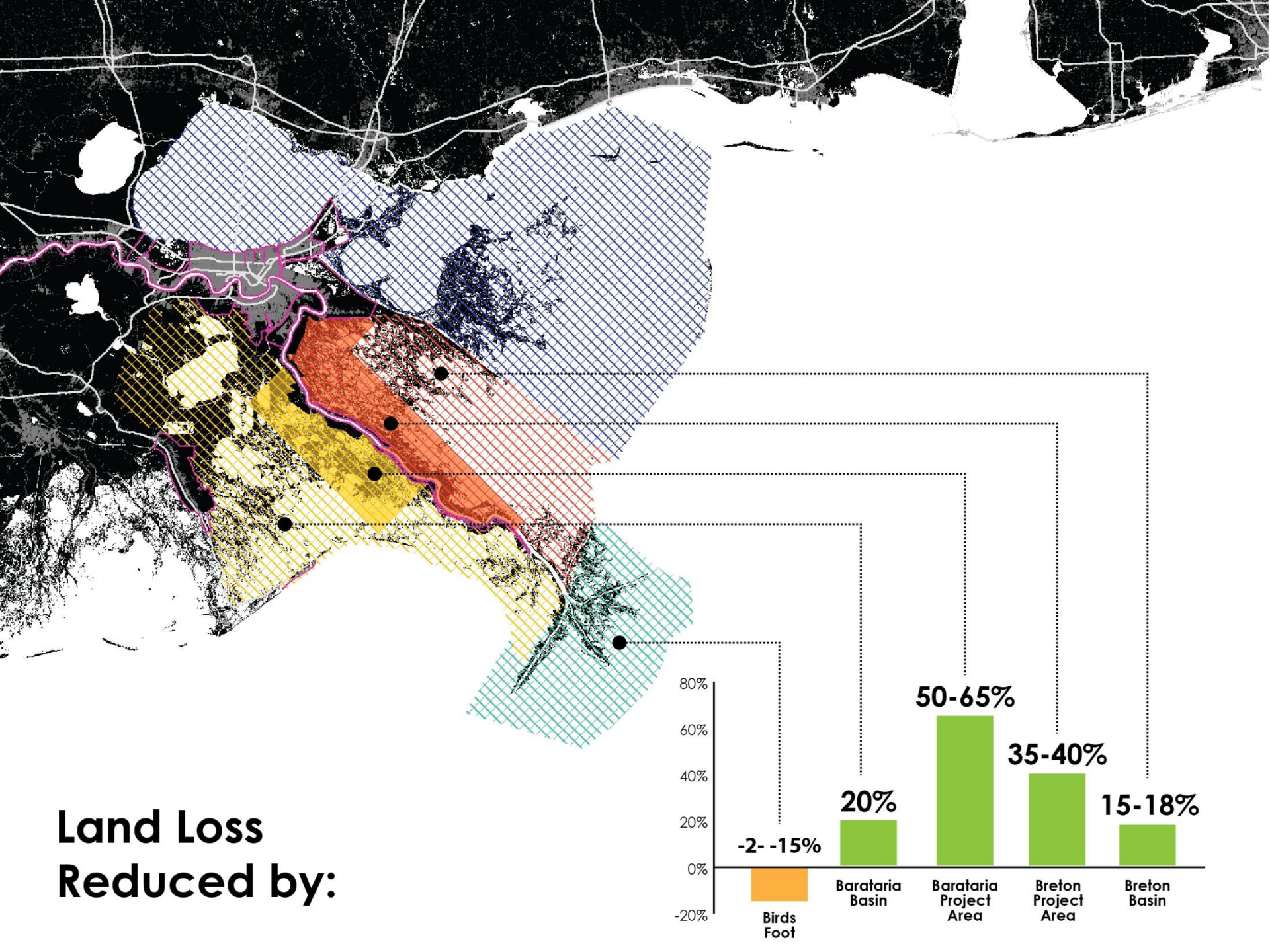
Data collection by the state and Corps for the MRHDM study has informed sediment loads used in modeling efforts since the 2012 Master Plan



Study Area

Mississippi River Hydrodynamic and Delta Management


Breton Basin
Breton Project Area
Barataria Project Area
Barataria Basin
Birds Foot



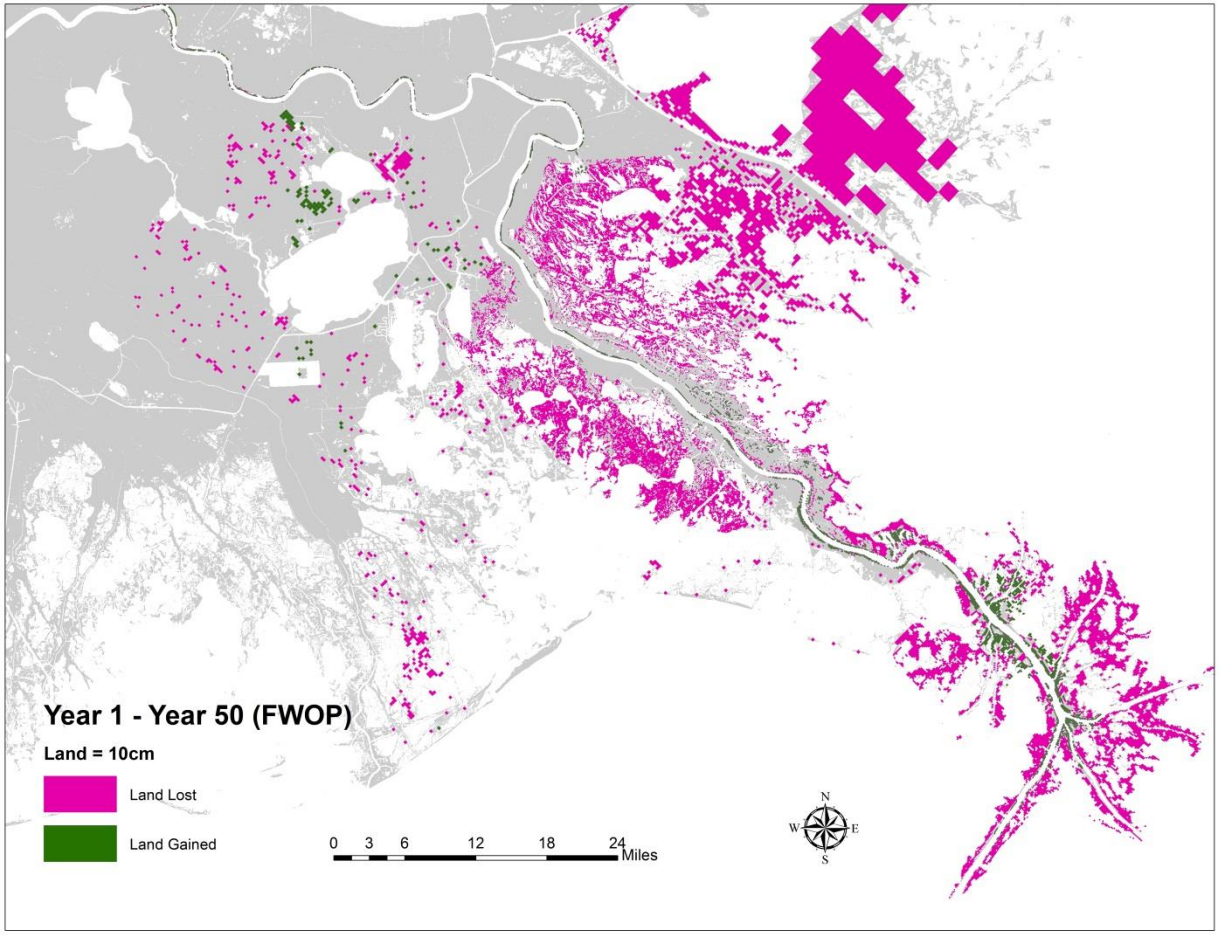
Land Loss Reduced by:

Net Acres Built or Sustained

At Year 50

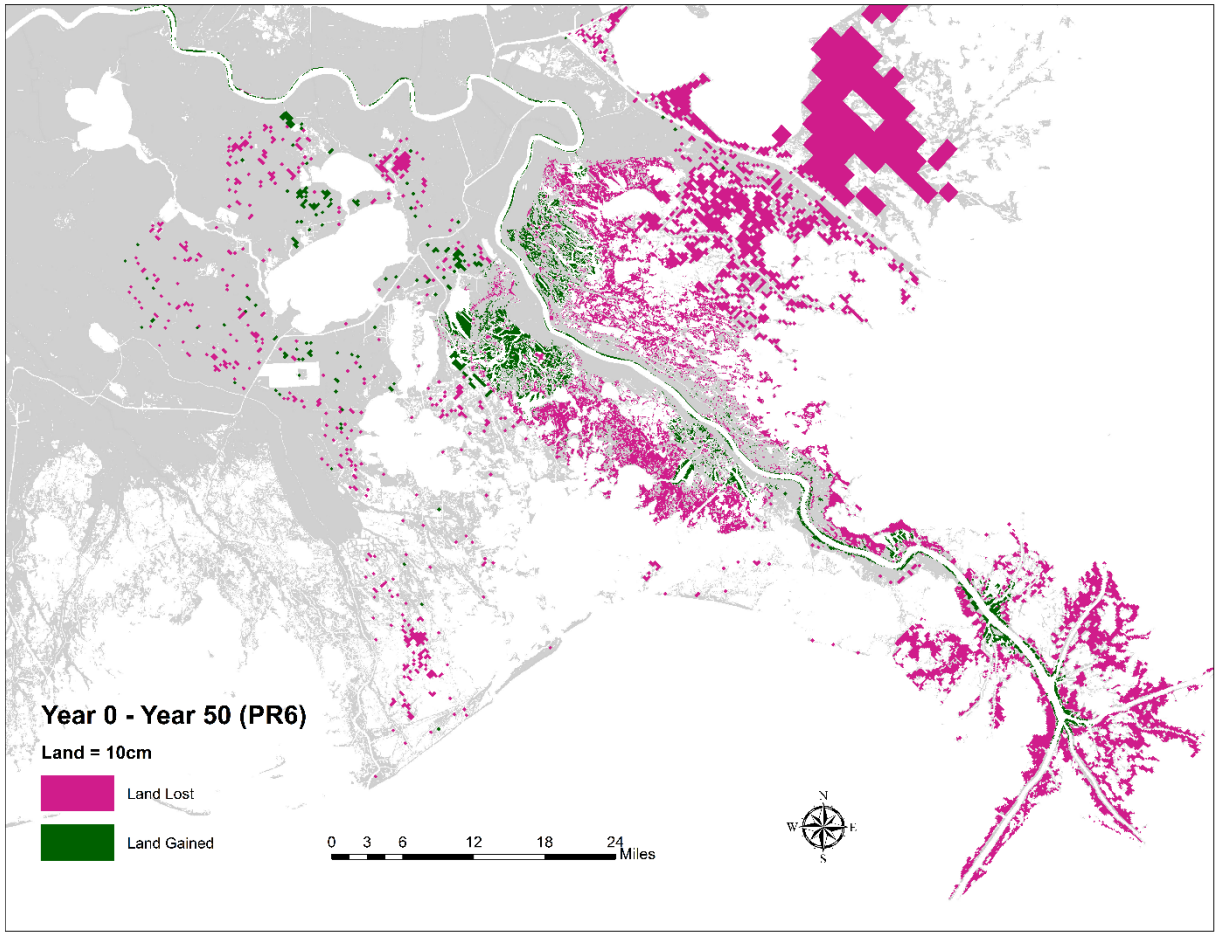
Diversion	MRDM Delft (Project Area)	2012 Master Plan
Mid-Barataria	24,200	32,200
Mid-Breton	16,100	14,100
Lower Barataria	5,400	13,100
Lower Breton	1,400	11,700

Land Change



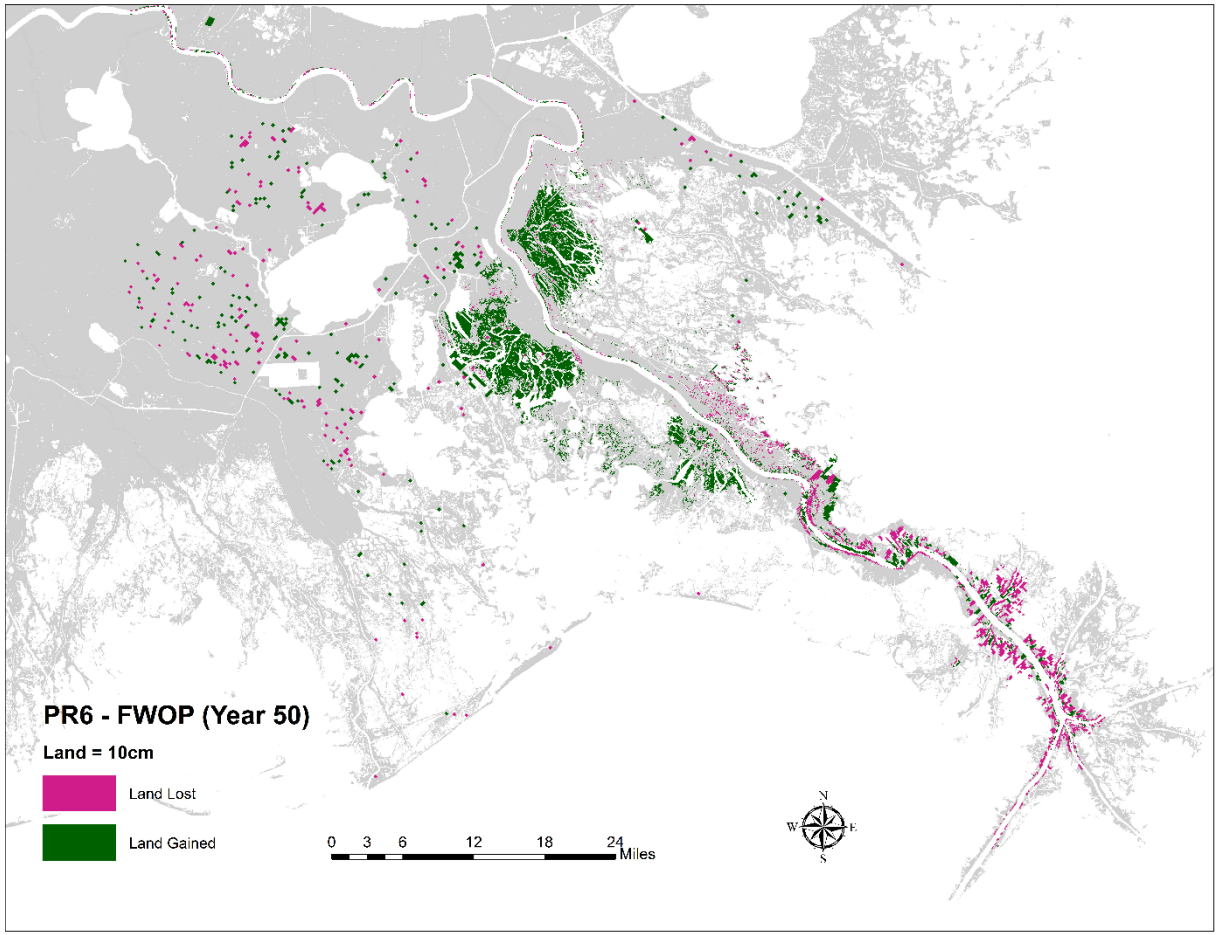
Future Without Project
(Year 50)

Land Change



Future with 4 Diversions
(Year 50)

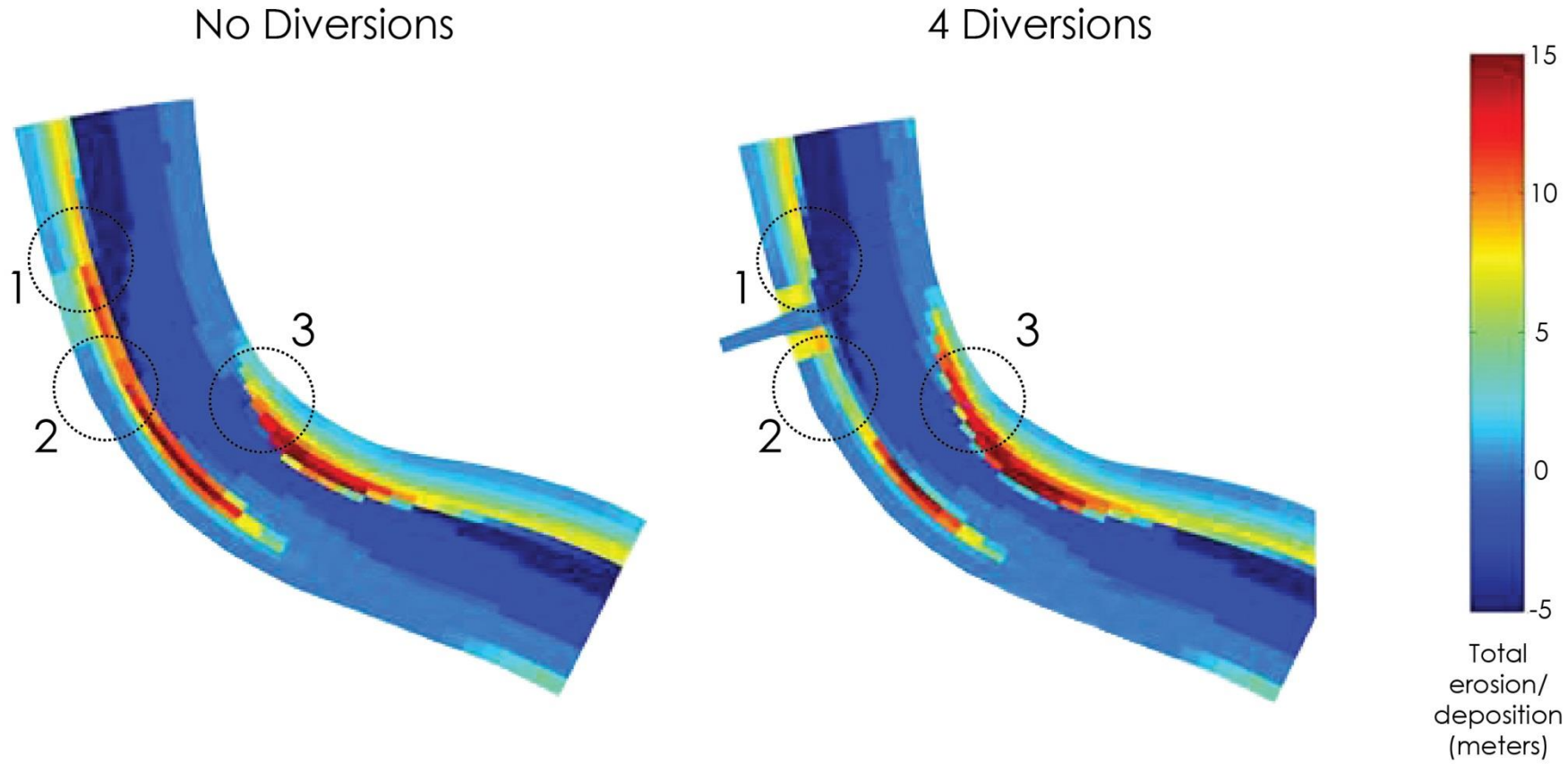
Land Change



Difference between 4 Diversions vs. FWOP (Year 50)

River Effects

Mid Barataria



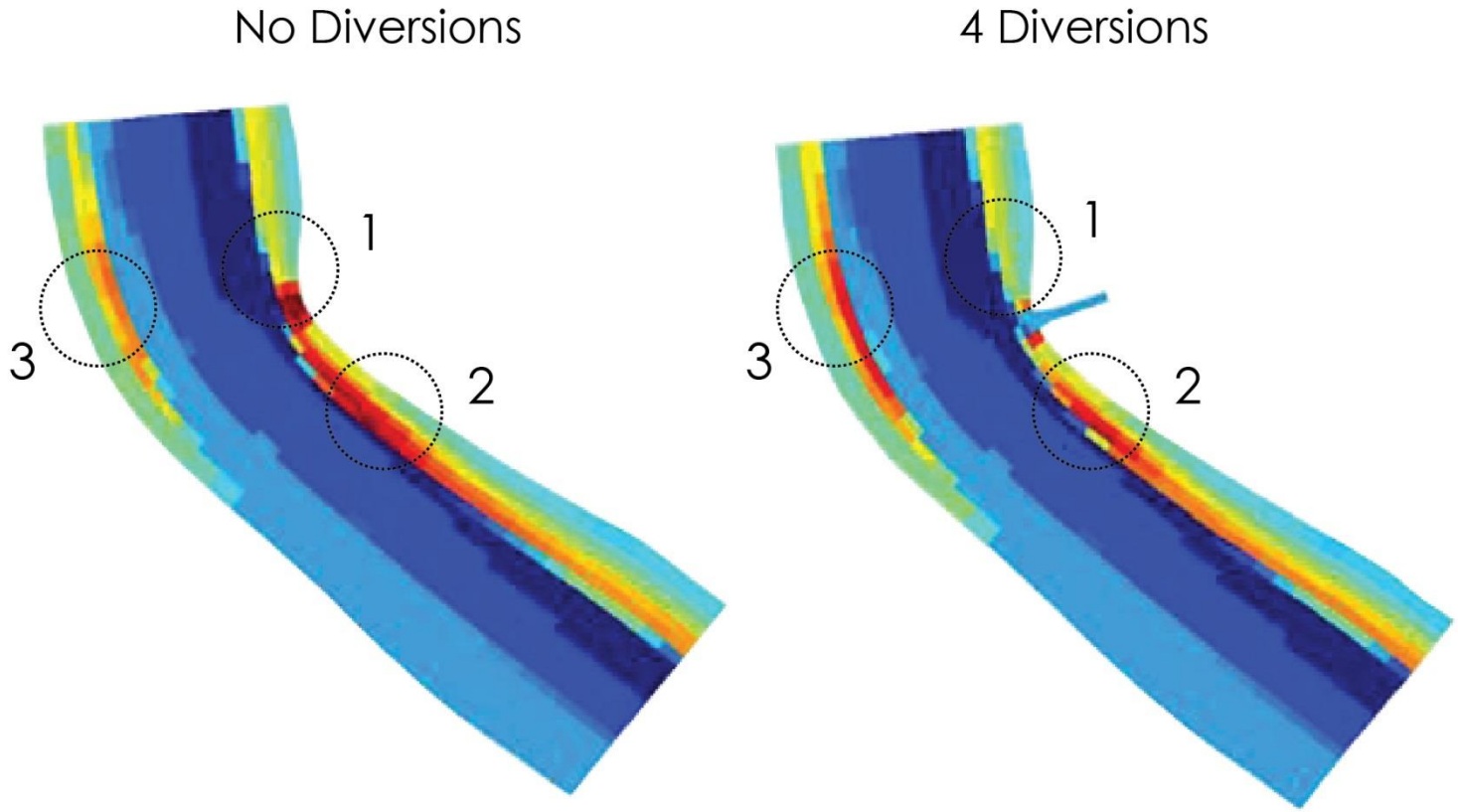
1- Increased local erosion

2- Reduced deposition

3- Enlarged point bar

River Effects

Mid Breton



1- Increased local erosion

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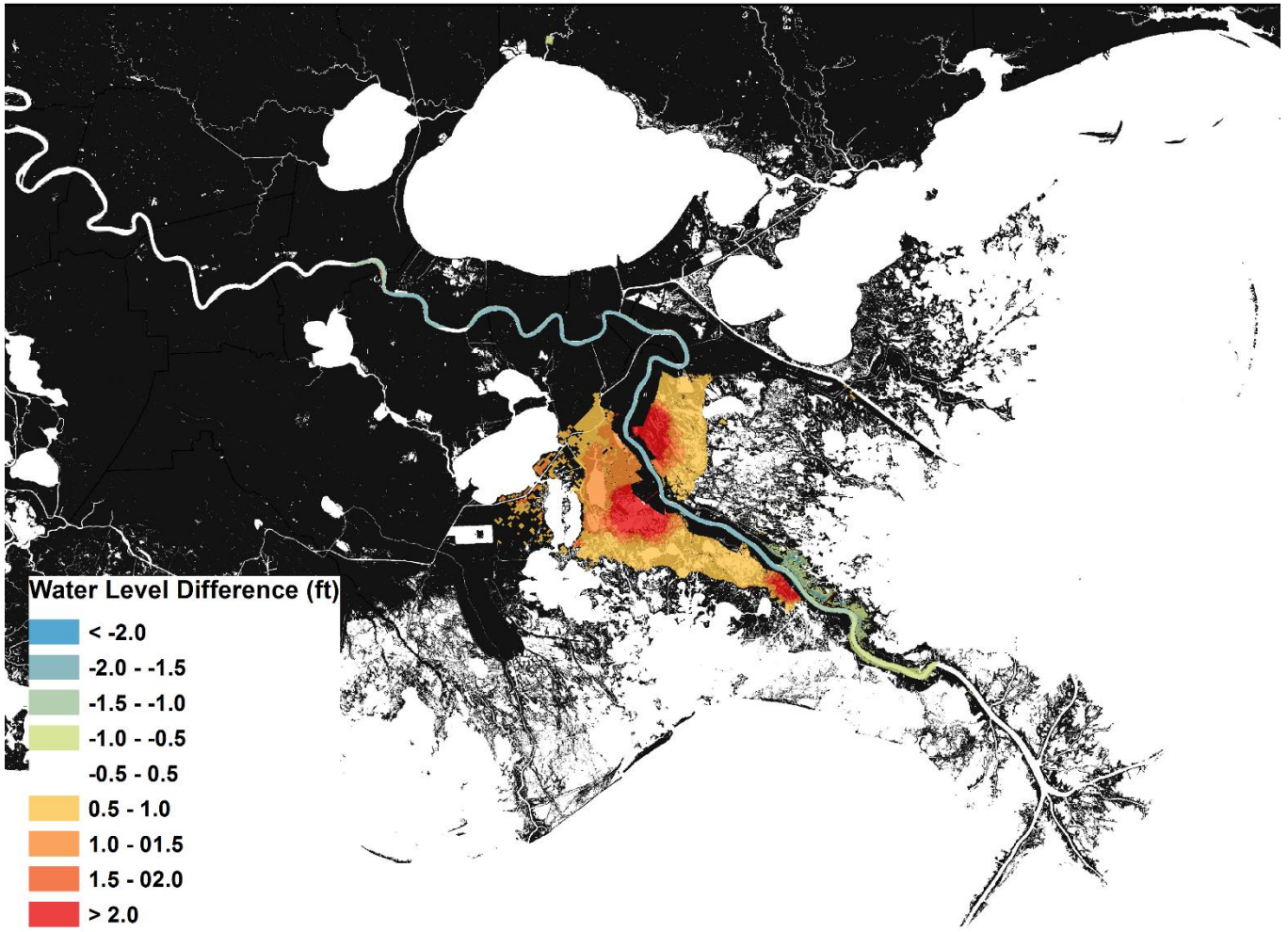
3- Enlarged point bar

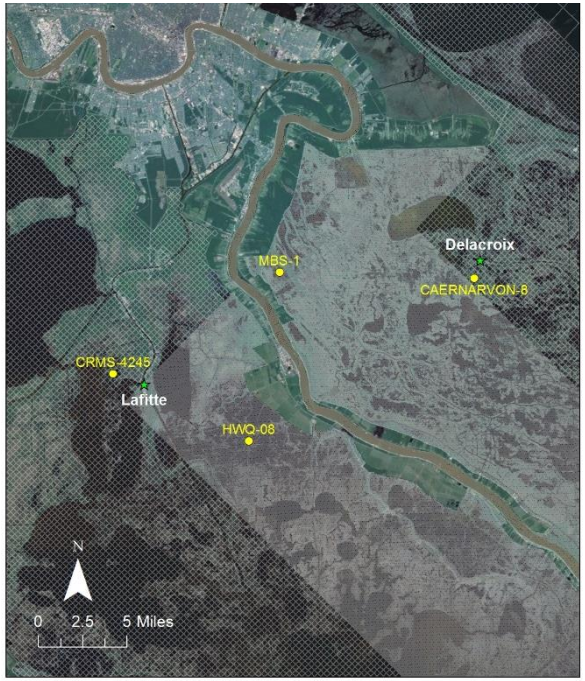
Water Level

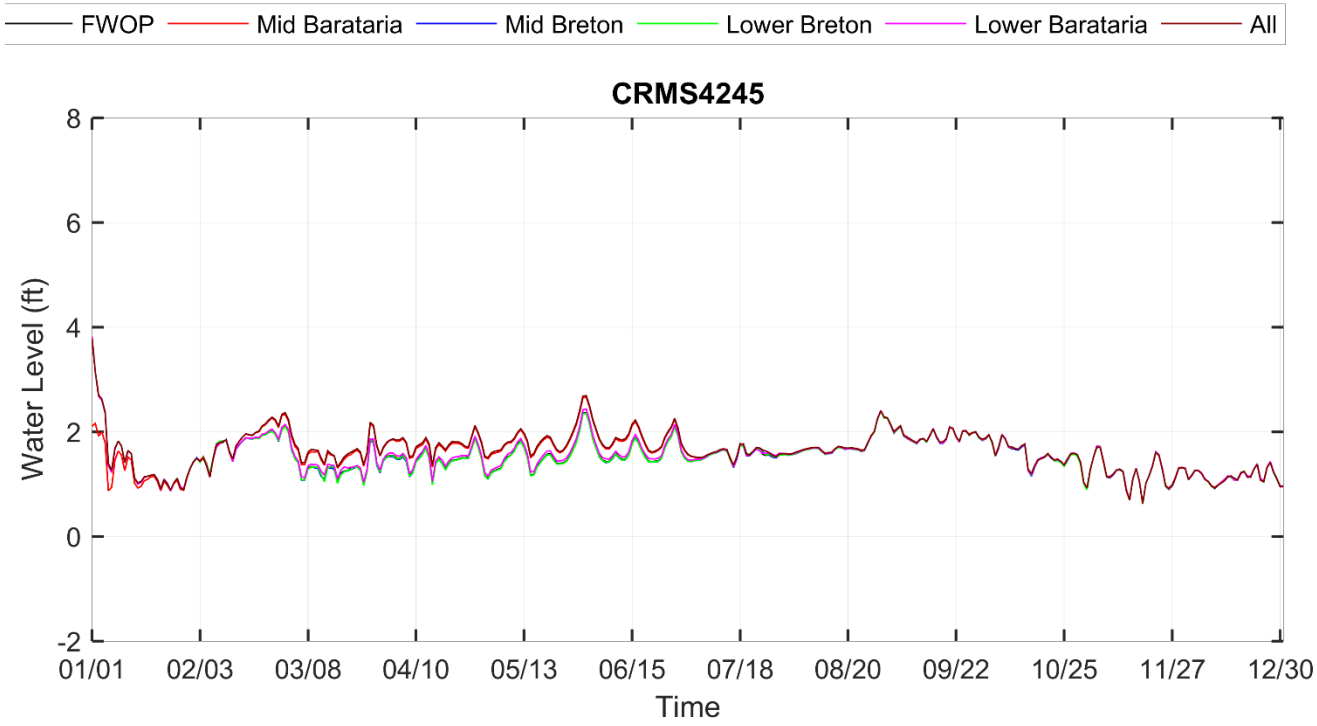


Difference between maximum levels for 4 Diversions vs. FWOP (Year 50)

Water Level

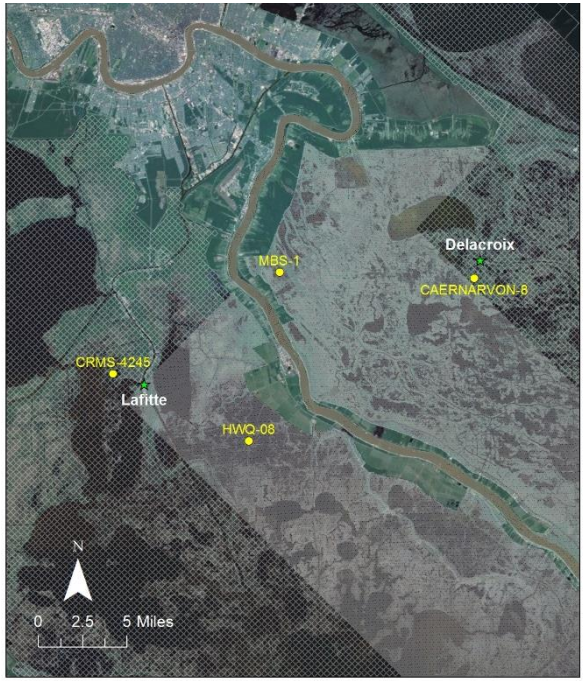
Near Lafitte, Year 50

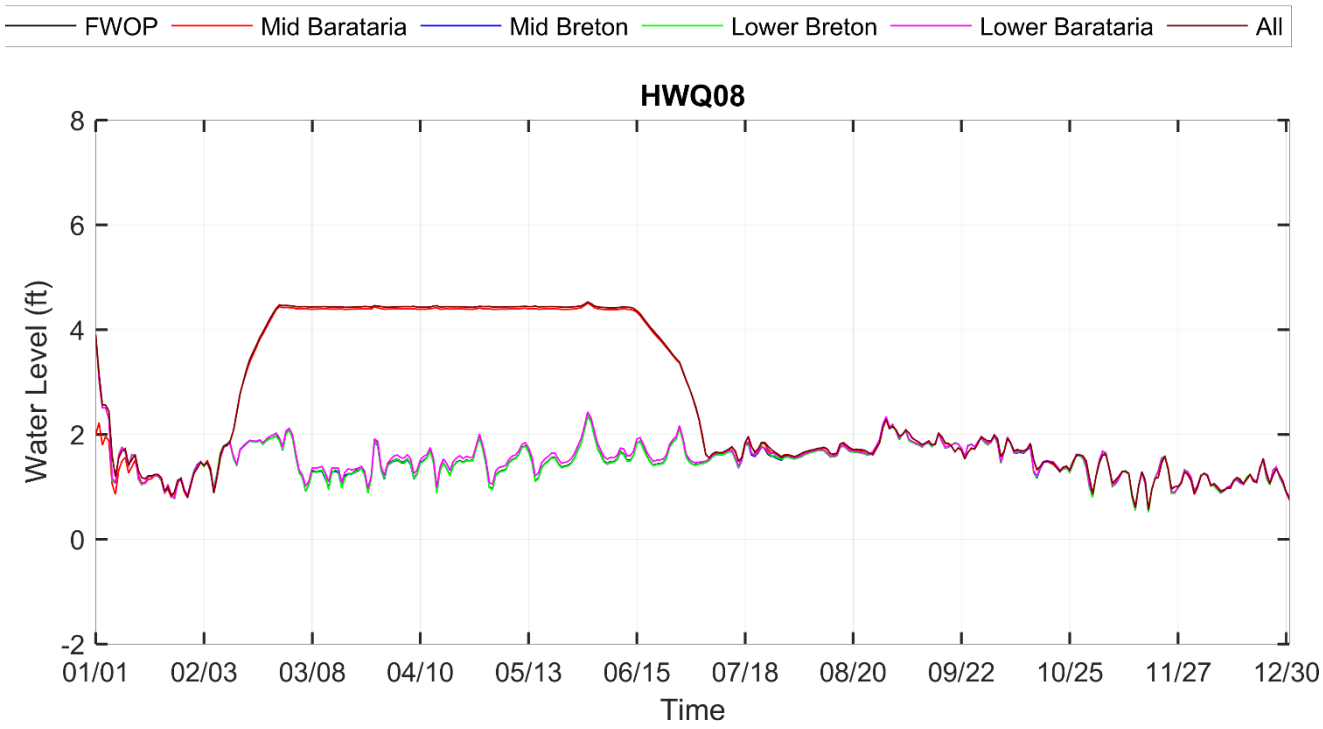




Water Level

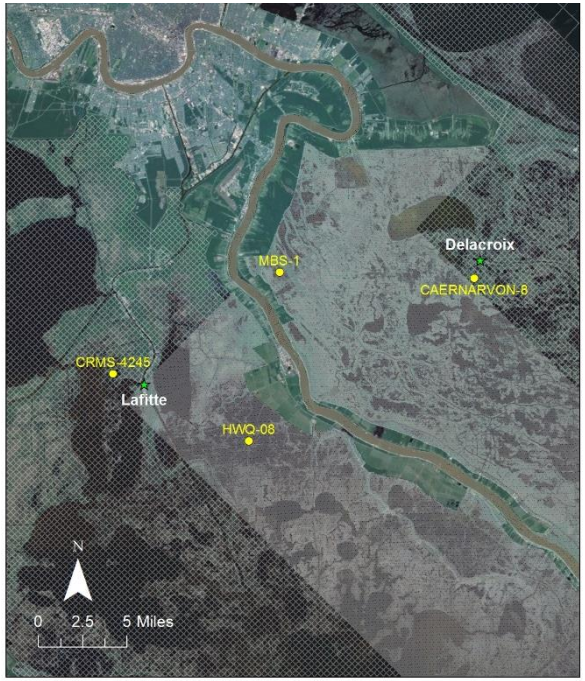
Mid Barataria Outfall Area, Year 50

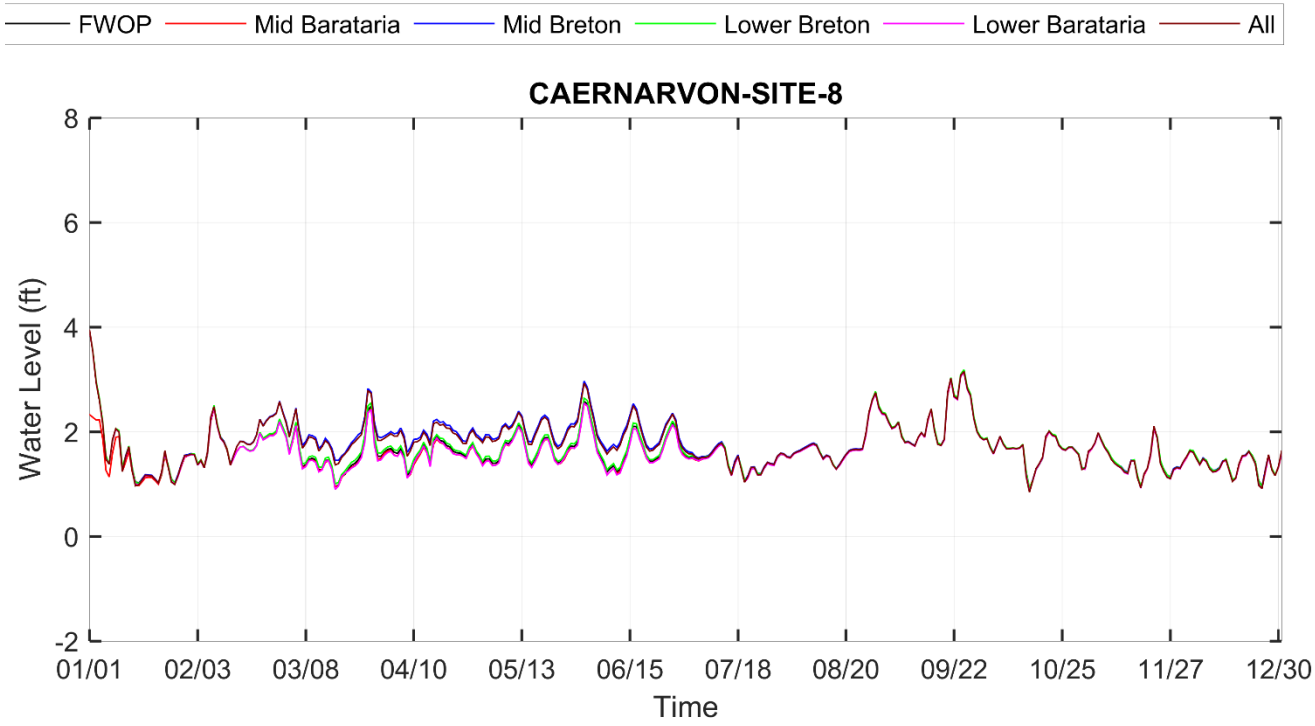




Water Level

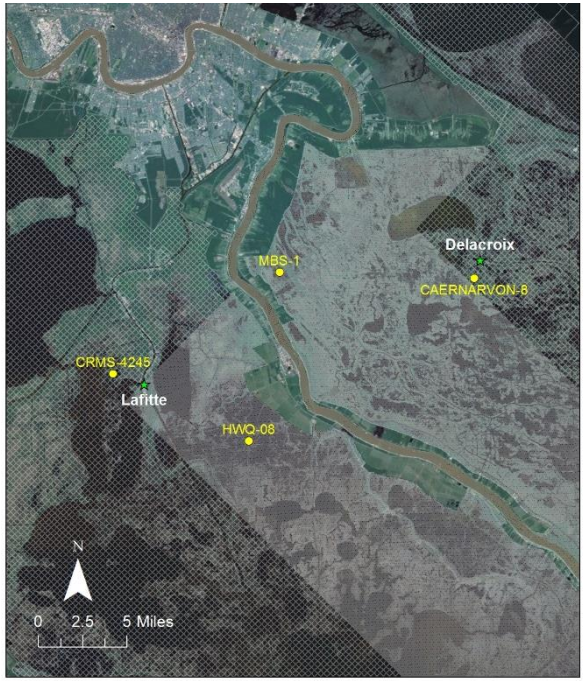
Near Delacroix, Year 50

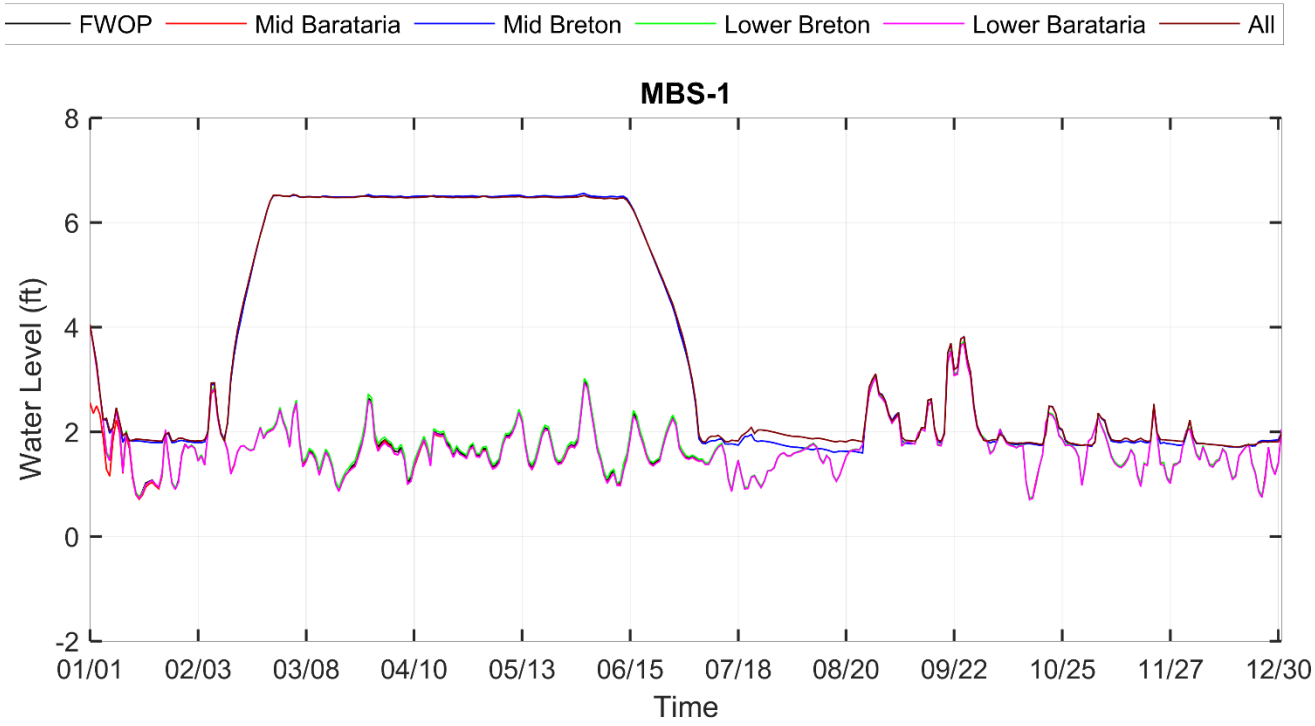




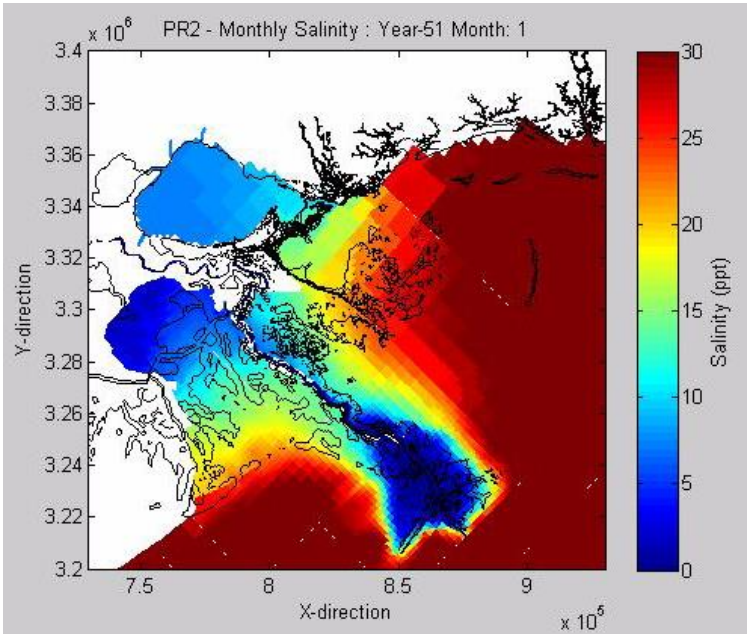
Water Level

Mid Breton Outfall Area, Year 50

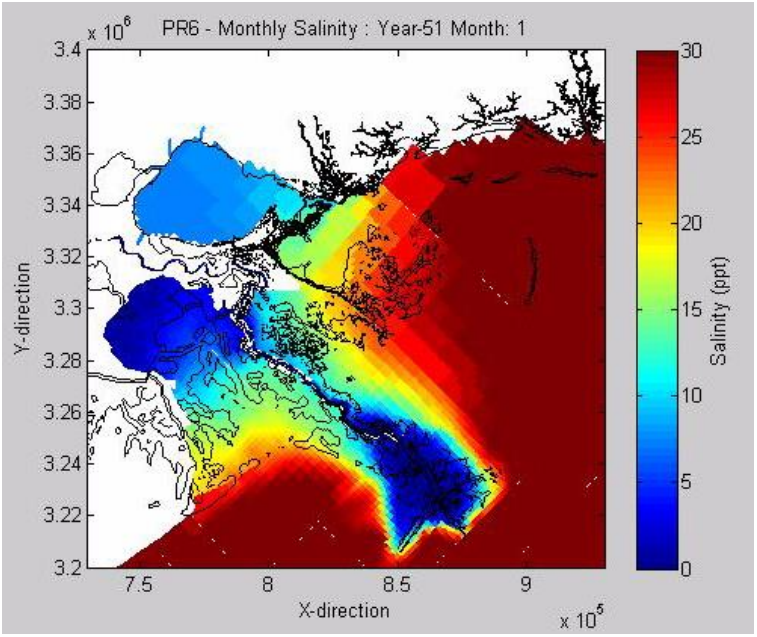




Salinity – Year 50

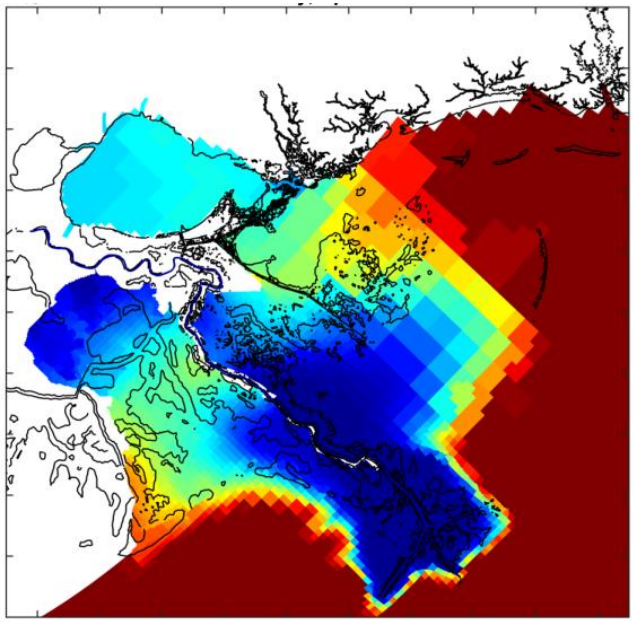


Future Without Project

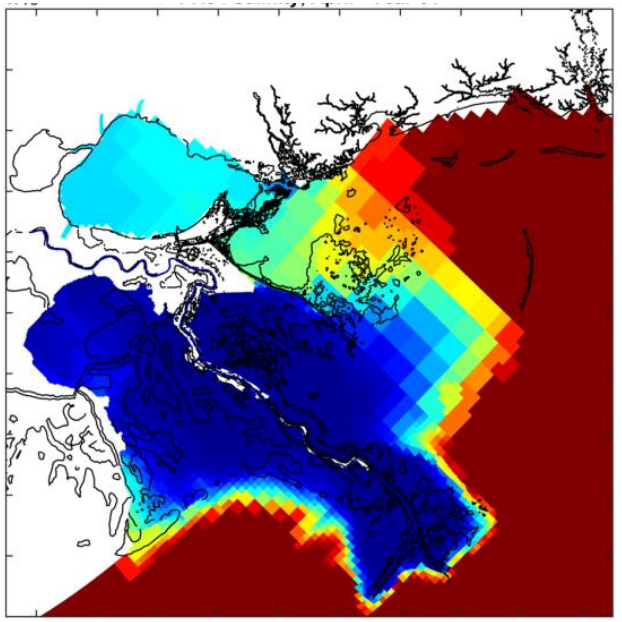


4 Diversions

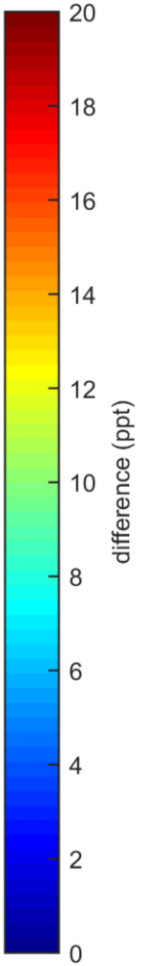
Salinity – Active (Spring)



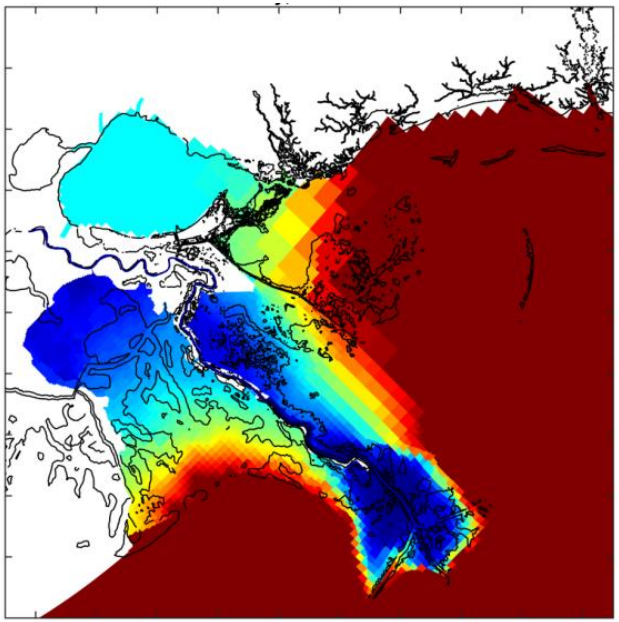
Future Without Project
(Year 50)



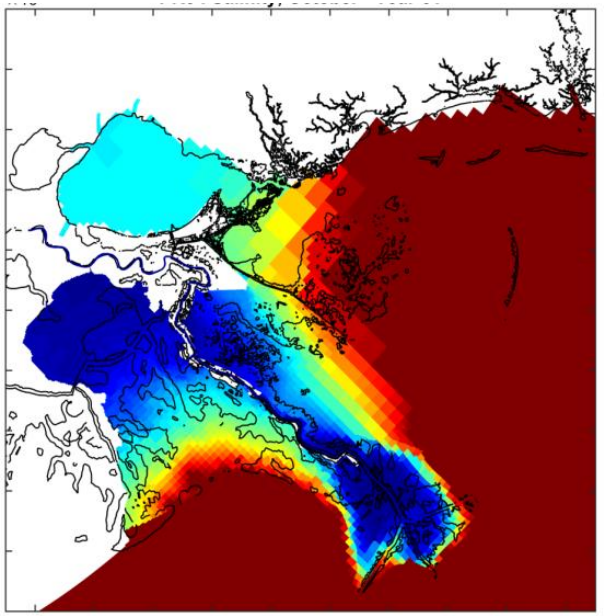
4 Diversions
(Year 50)



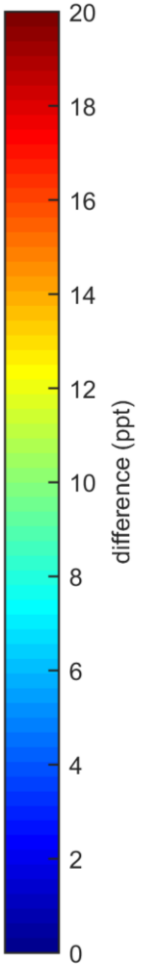
Salinity – Inactive (Fall)



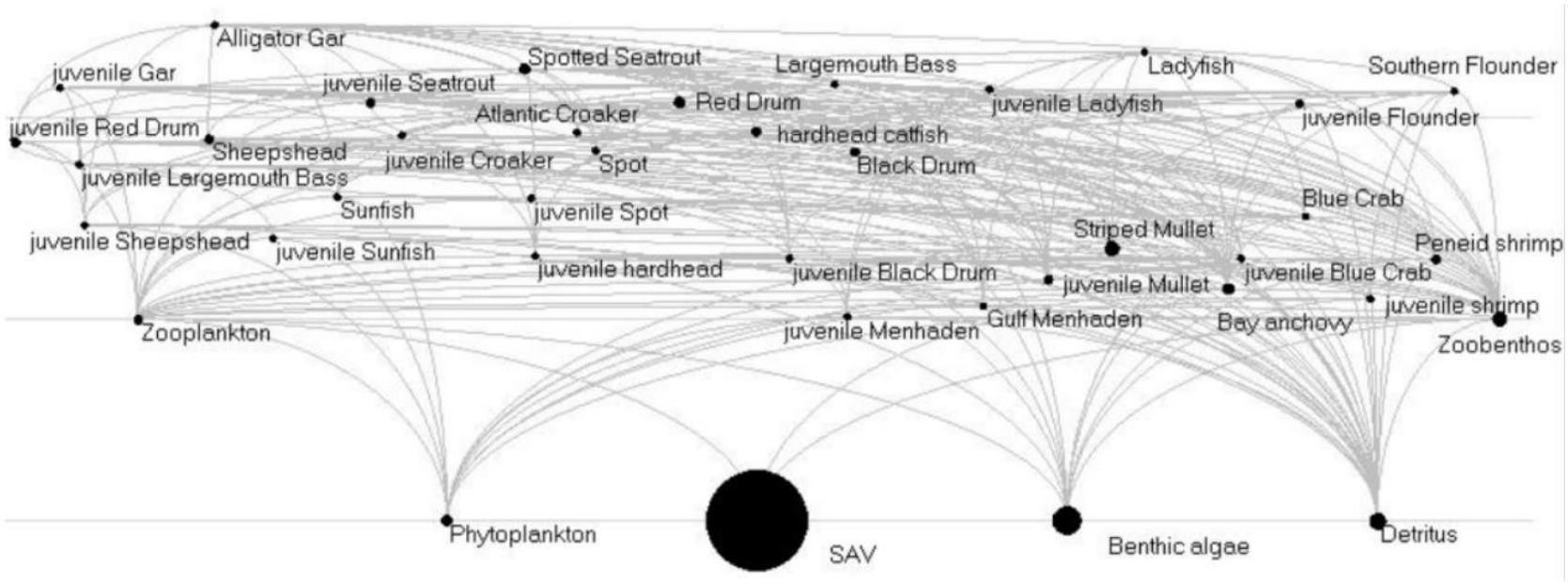
Future Without Project
(Year 50)



4 Diversions
(Year 50)

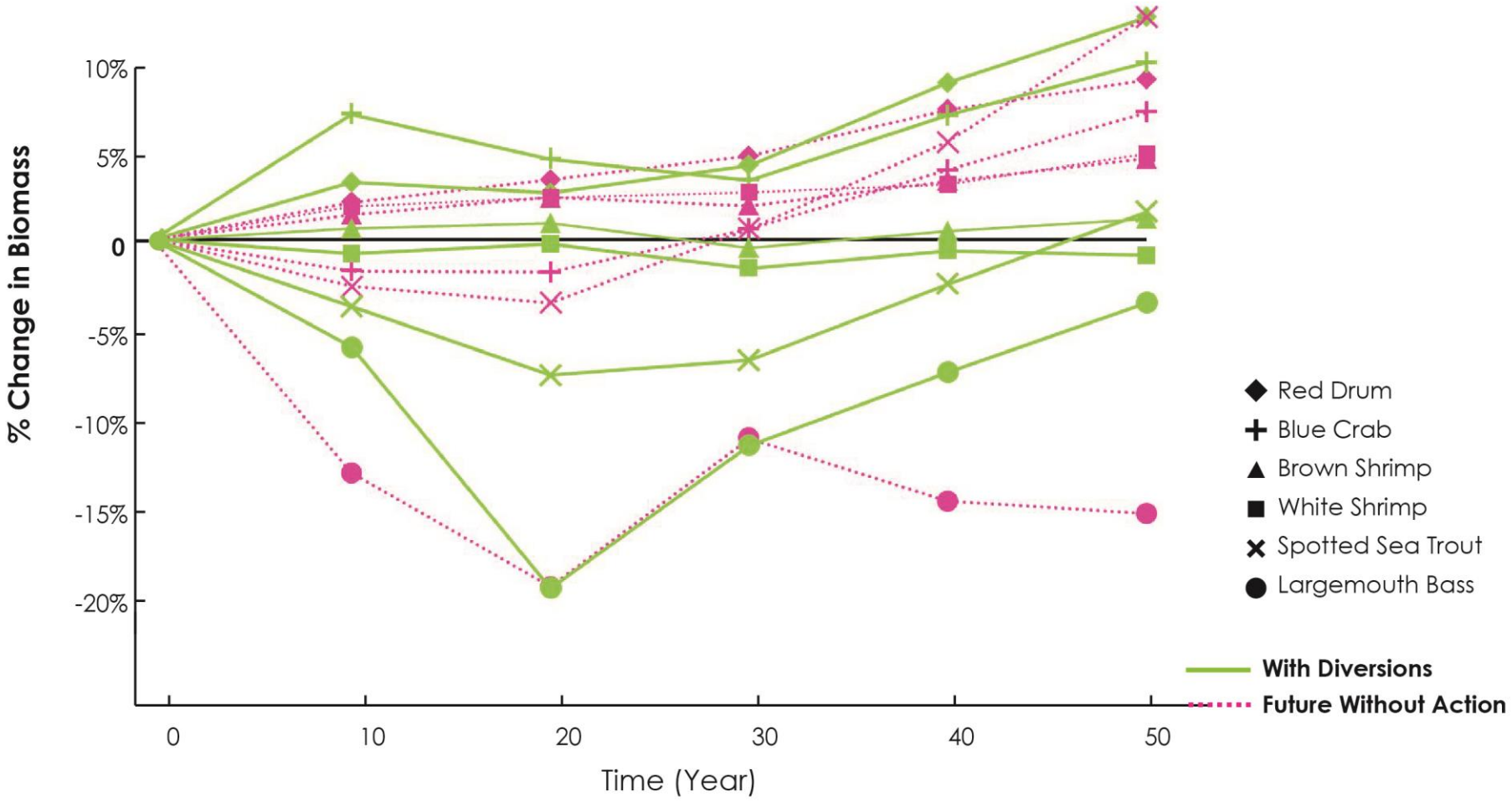


Food Webs in Community Models



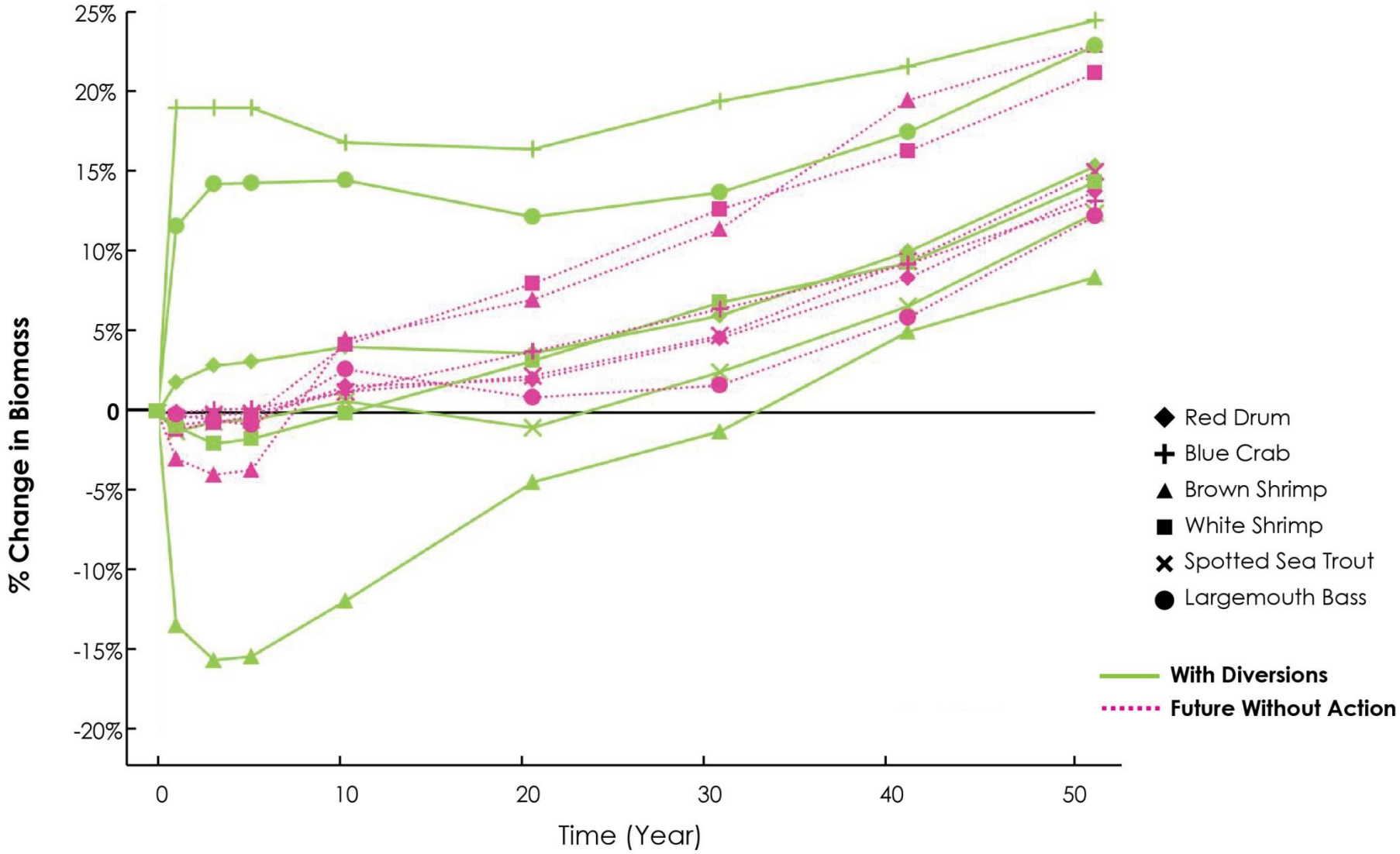
Fisheries

Change from Initial Conditions (EwE)



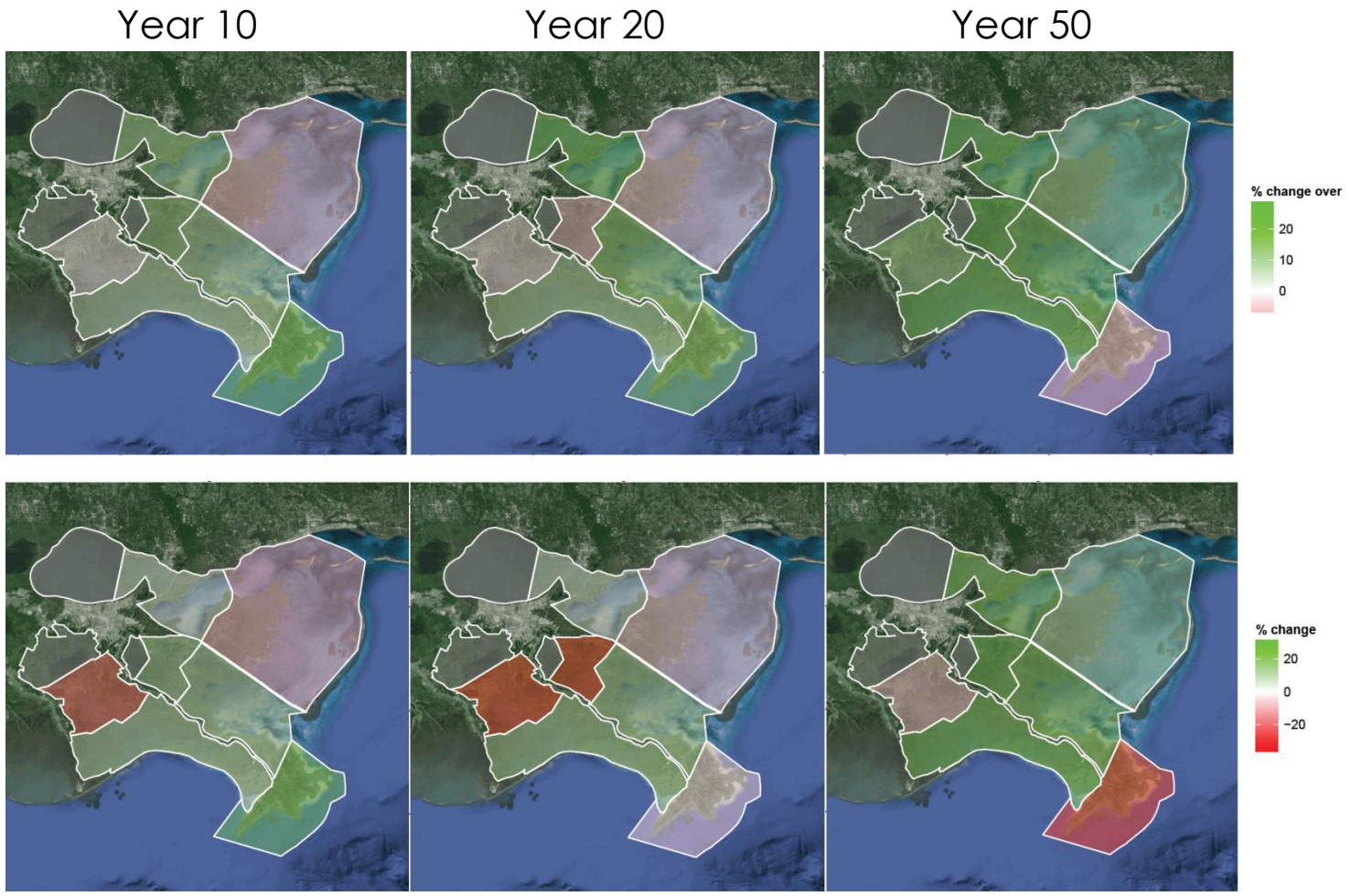
Fisheries

Change from Initial Conditions (CASM)



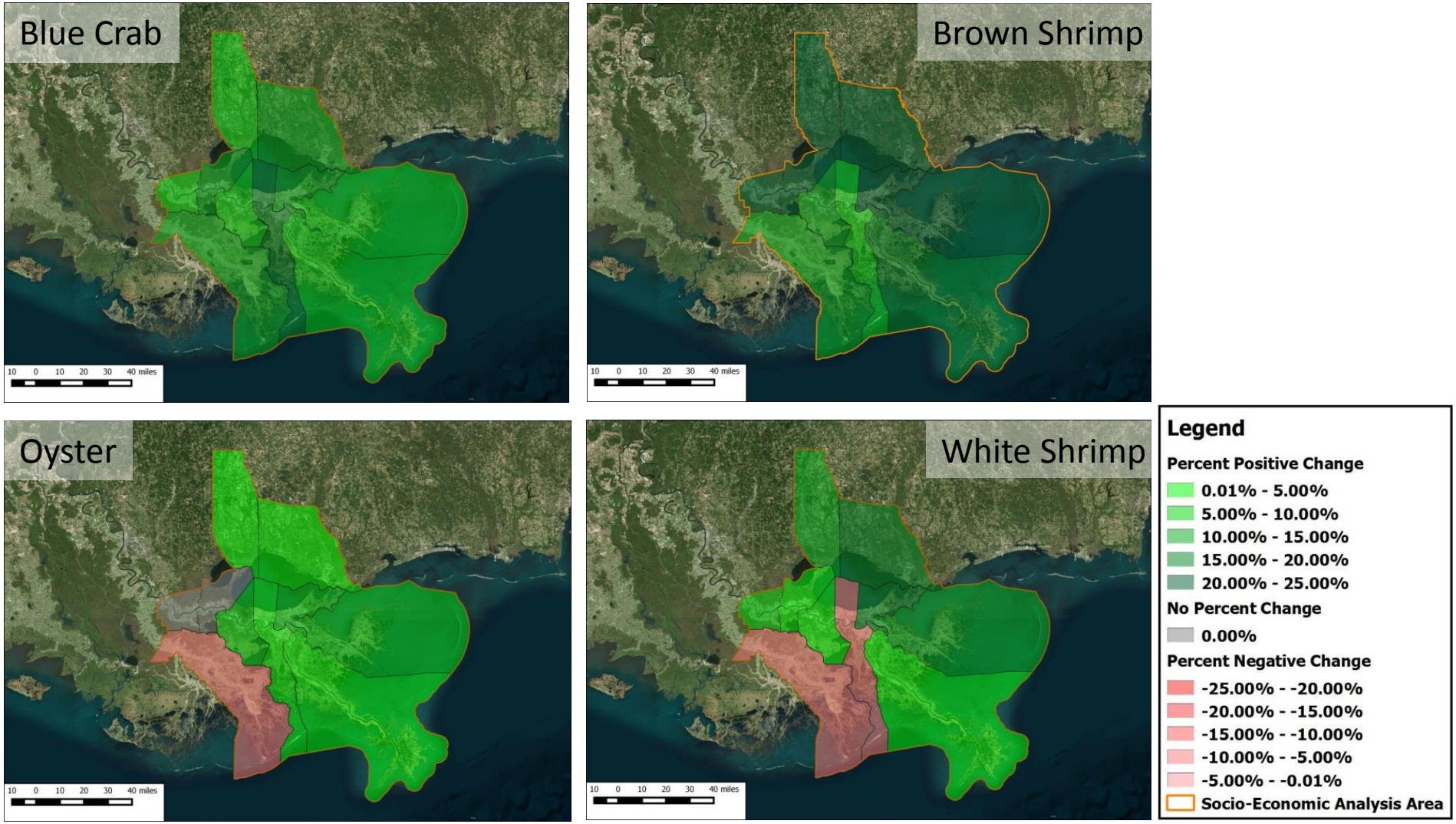
Oyster Biomass

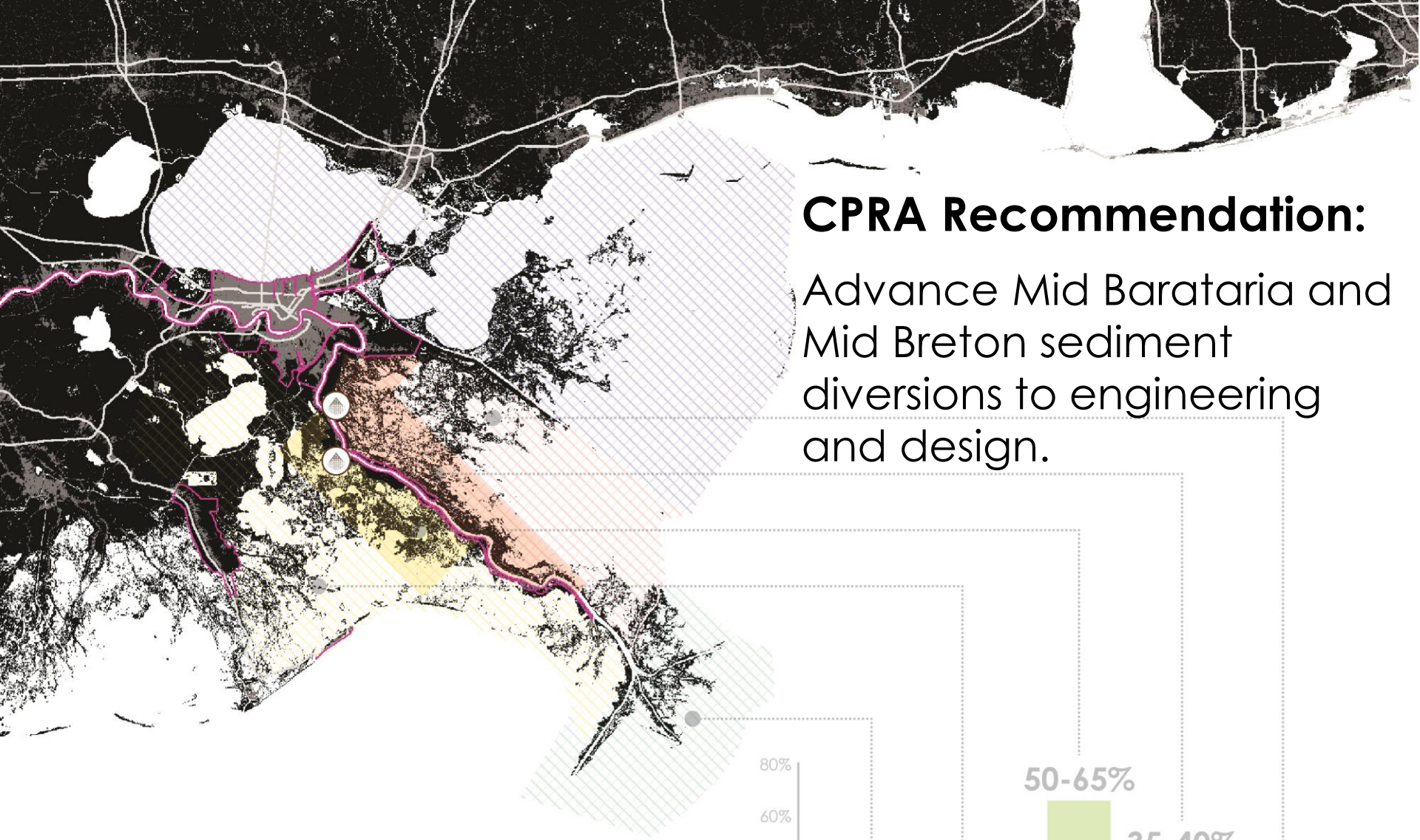
Change from Initial Conditions



Fisher Parish Harvest

4 Diversions – Change from Initial Conditions (Year 50)

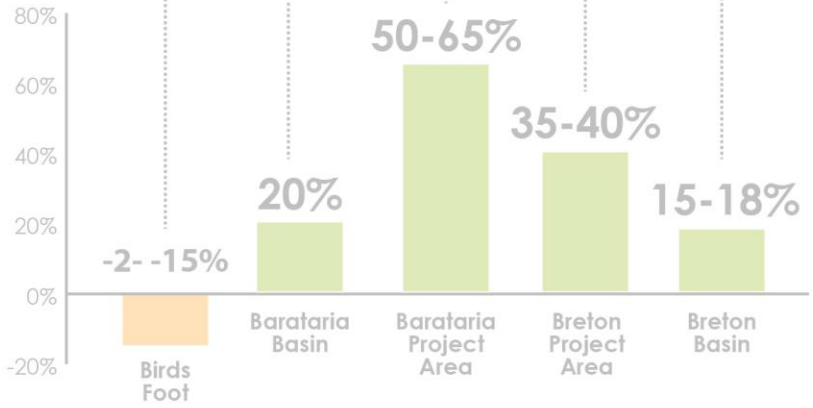




CPRA Recommendation:

Advance Mid Barataria and Mid Breton sediment diversions to engineering and design.

Land Loss Reduced by:



Next Steps

Immediate:

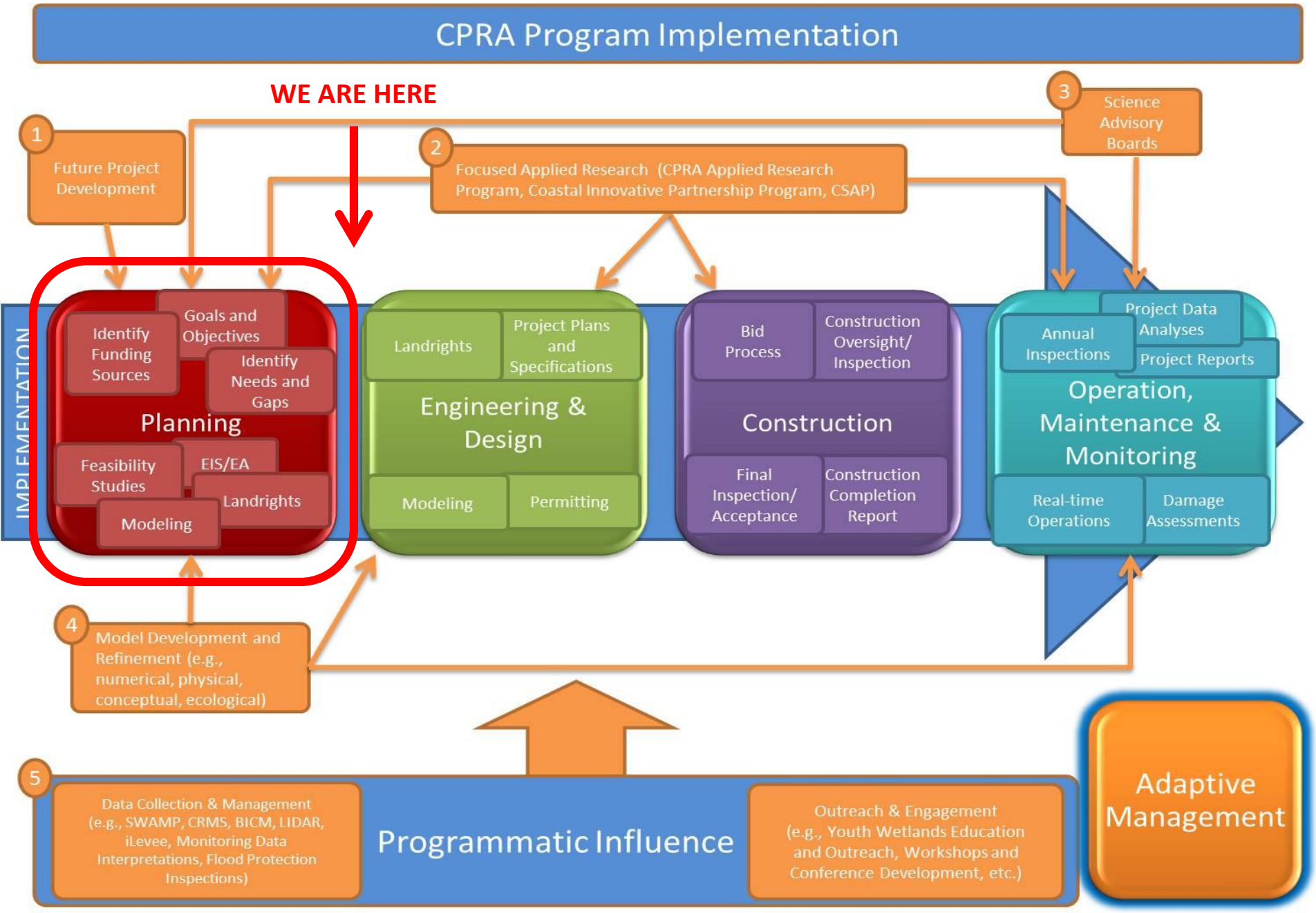
- Additional public outreach – approximately 20 key briefings
- FY17 Annual Plan

Intermediate:

- Model Mid Barataria and Mid Breton diversions together
- Continue to refine/communicate results
- Publish model results; peer review
- Assemble project delivery teams

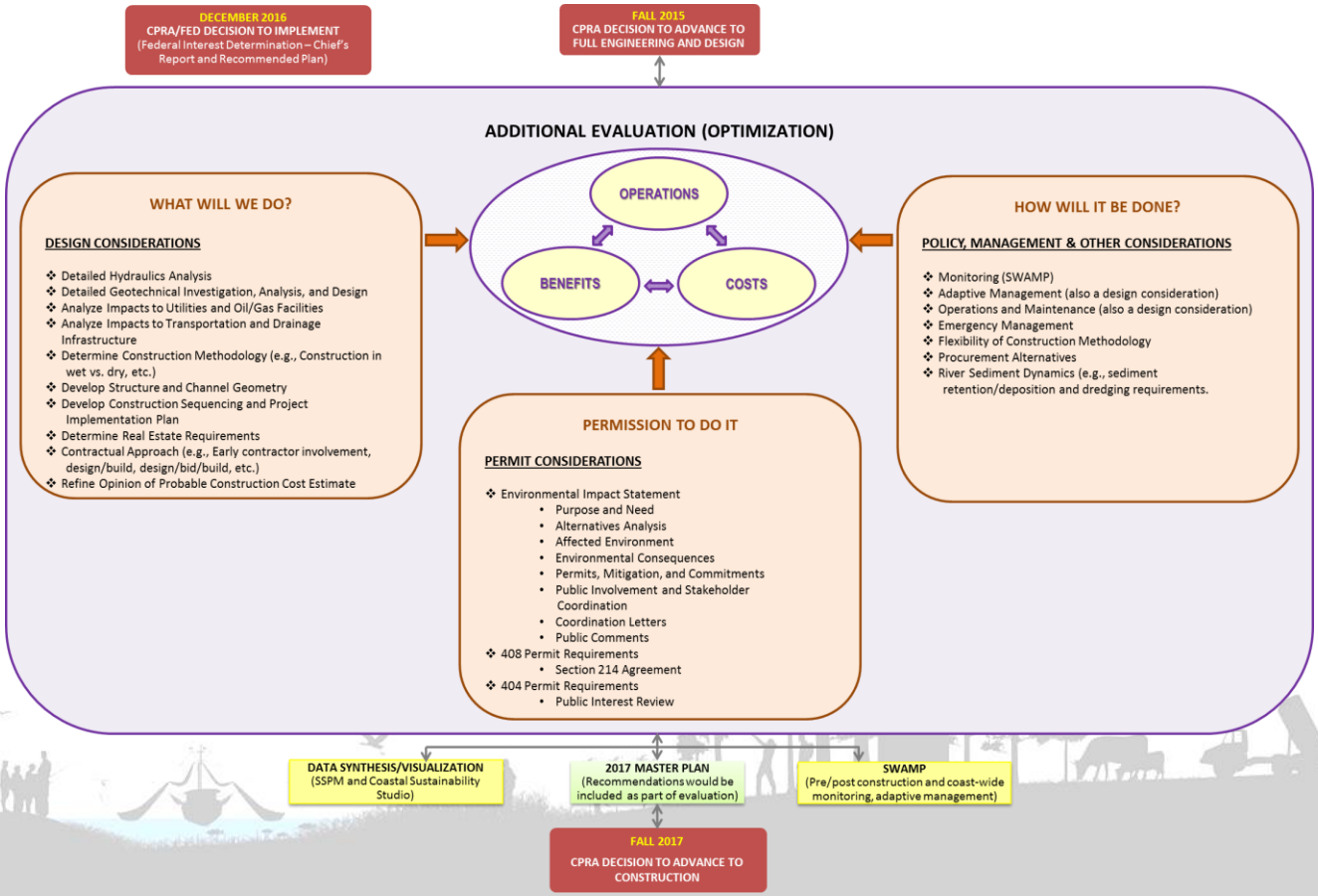
Long-term:

- Engineering and design
- Public scoping /project-specific outreach
- Operations
- Adaptive management


CPRA Program Implementation
WE ARE HERE
1
Future Project Development
2
Focused Applied Research (CPRA Applied Research Program, Coastal Innovative Partnership Program, CSAP)
3
Science Advisory Boards
IMPLEMENTATION
Identify Funding Sources
Goals and Objectives
Identify Needs and Gaps
Planning
Feasibility Studies
EIS/EA
Landrights
Modeling
Landrights
Project Plans and Specifications
Engineering & Design
Modeling
Permitting
Bid Process
Construction Oversight/ Inspection
Construction
Final Inspection/ Acceptance
Construction Completion Report
Project Data Analyses
Annual Inspections
Project Reports
Operation, Maintenance & Monitoring
Real-time Operations
Damage Assessments
4
Model Development and Refinement (e.g., numerical, physical, conceptual, ecological)
5
Data Collection & Management (e.g., SWAMP, CRMS, BICM, LIDAR, iLevee, Monitoring Data Interpretations, Flood Protection Inspections)
Programmatic Influence
Outreach & Engagement (e.g., Youth Wetlands Education and Outreach, Workshops and Conference Development, etc.)
Adaptive Management

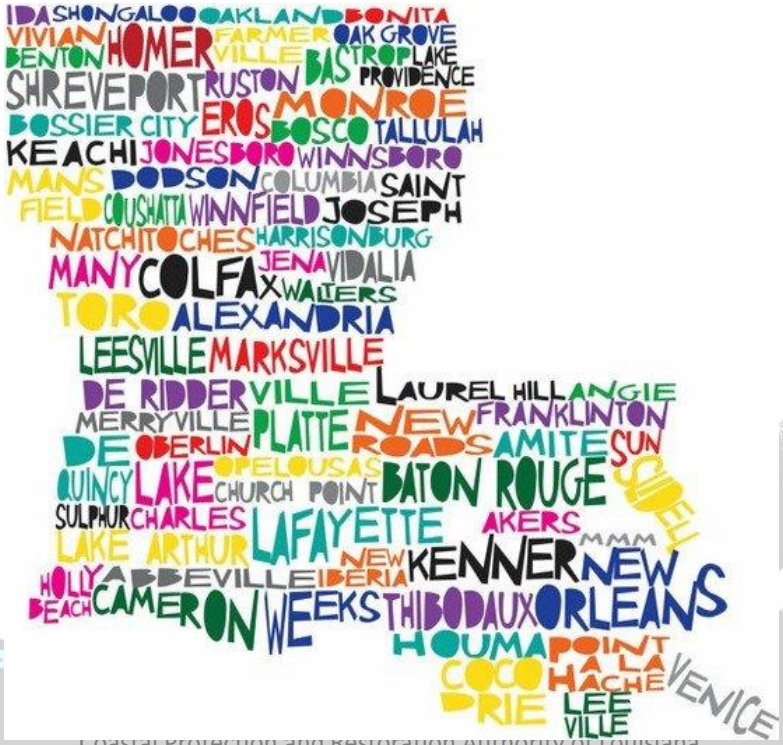
Panel Recommendation

Expand the post-2015 section of the current conceptual model of the sediment diversion planning process to provide greater detail on process linkages.



Panel Recommendation

Develop a public participation plan that features the use of an independent facilitator who can provide deeper, more confident stakeholder engagement and community participation, especially on early discussion of evolving post-construction operating plans.



Panel Recommendation

Establish a program for detailed peer review of the first set of technical reports on monitoring, modeling, and socio-economic analysis using subject-matter experts from outside CPRA.

WWW.Coastal.LA.Gov

Thank You!

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Outreach and Engagement

Responding to Our Stakeholders

October

- Diversion Expert Panel
- Governor's Advisory Commission (Diversion Sub-Committee)

November

- LDWF Commission
- Oyster Task Force
- Crab Task Force
- St. Bernard Parish Council Meeting

December

- Governor's Advisory Commission
- Plaquemines Parish Council Meeting
- Master Plan Framework Development Team
- Master Plan Science and Engineering Board

January/February

- Navigation Industry Representatives
- Coastal Communities Consulting
- Master Plan Focus Groups (Navigation, Fisheries, Communities, Landowners, Energy & Industry)
- Coastal Conservation Association

Pending

- Shrimp Task Force