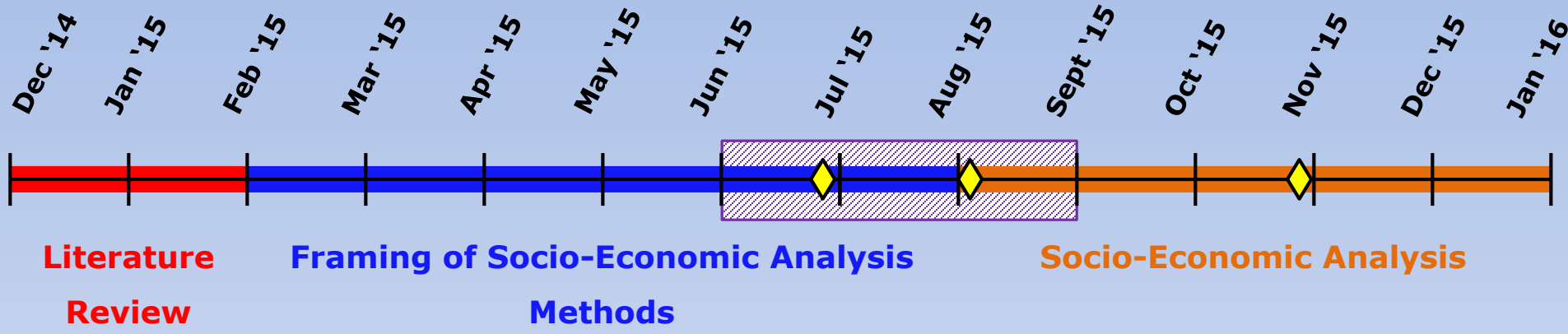
Basin-Wide Socio-Economic Analysis of Four Proposed Sediment Diversions

Status Update

October 27, 2015

Overview of Timeline And Current Status



Legend:

Production Runs of Biophysical Models Being Utilized in the Socio-Economic Analysis

Royal/EE Presentations to Expert Panel

We have begun producing draft outputs, which are currently undergoing internal review and QA/QC.

Outline of Presentation

- Overview of Socio-Economic Analysis
  - Scenarios & Objectives
  - Framework & Methodology
- Draft Outputs
  - Commercial Fisheries
  - Ecosystem Service Valuation
  - Storm Protection
- Timeline of Remaining Activities

Proposed Sediment Diversions

Six Scenarios Being Analyzed

Scenario 1: Future without diversion action — FWOA

Scenario 2: Future with only Lower Breton Diversion — FWA

Scenario 3: Future with only Lower Barataria Diversion — FWA

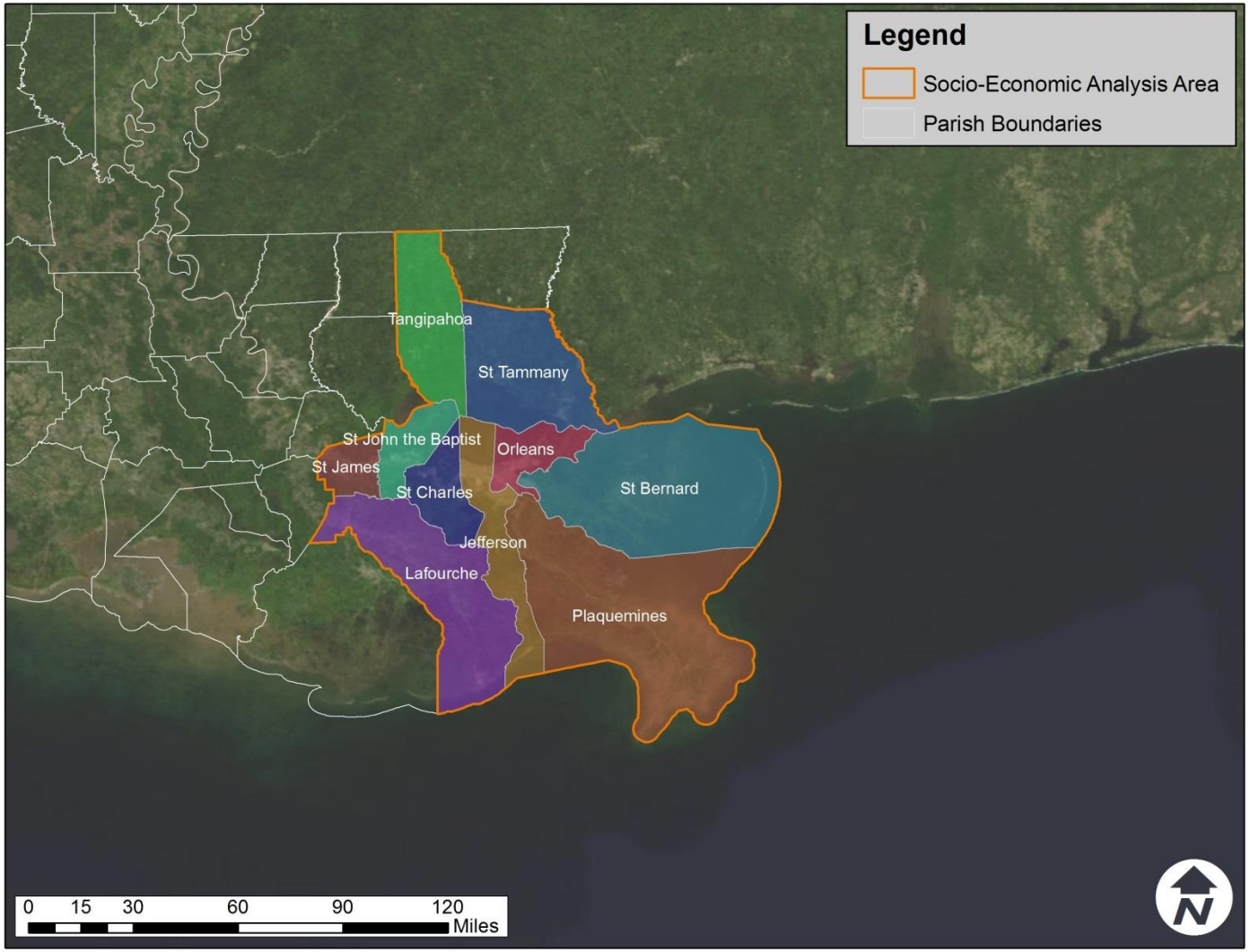
Scenario 4: Future with only Mid Breton Diversion — FWA

Scenario 5: Future with only Mid Barataria Diversion — FWA

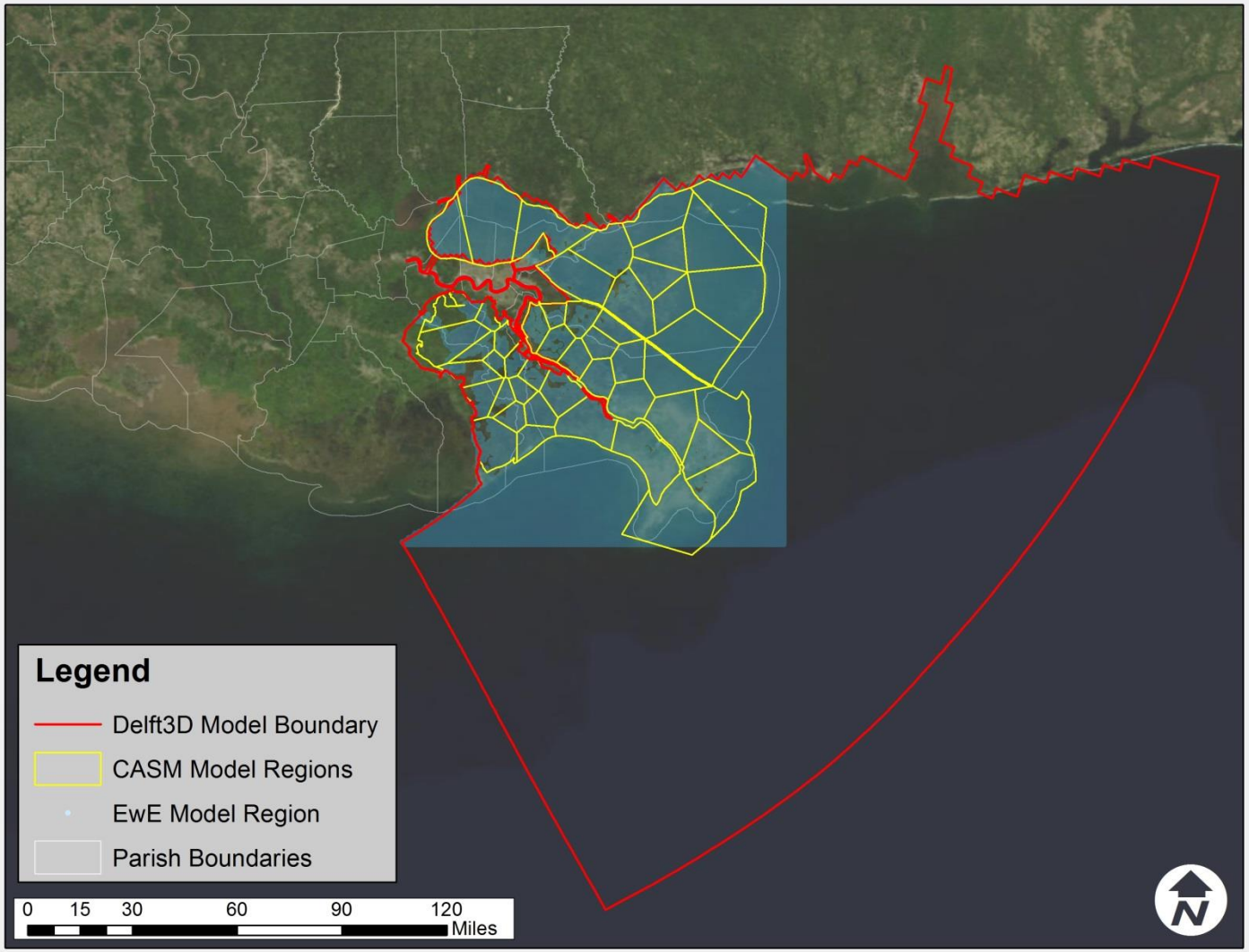
Scenario 6: Future with all 4 diversions operating simultaneously — FWA

An Analysis of Mid Breton + Mid Barataria is Anticipated.

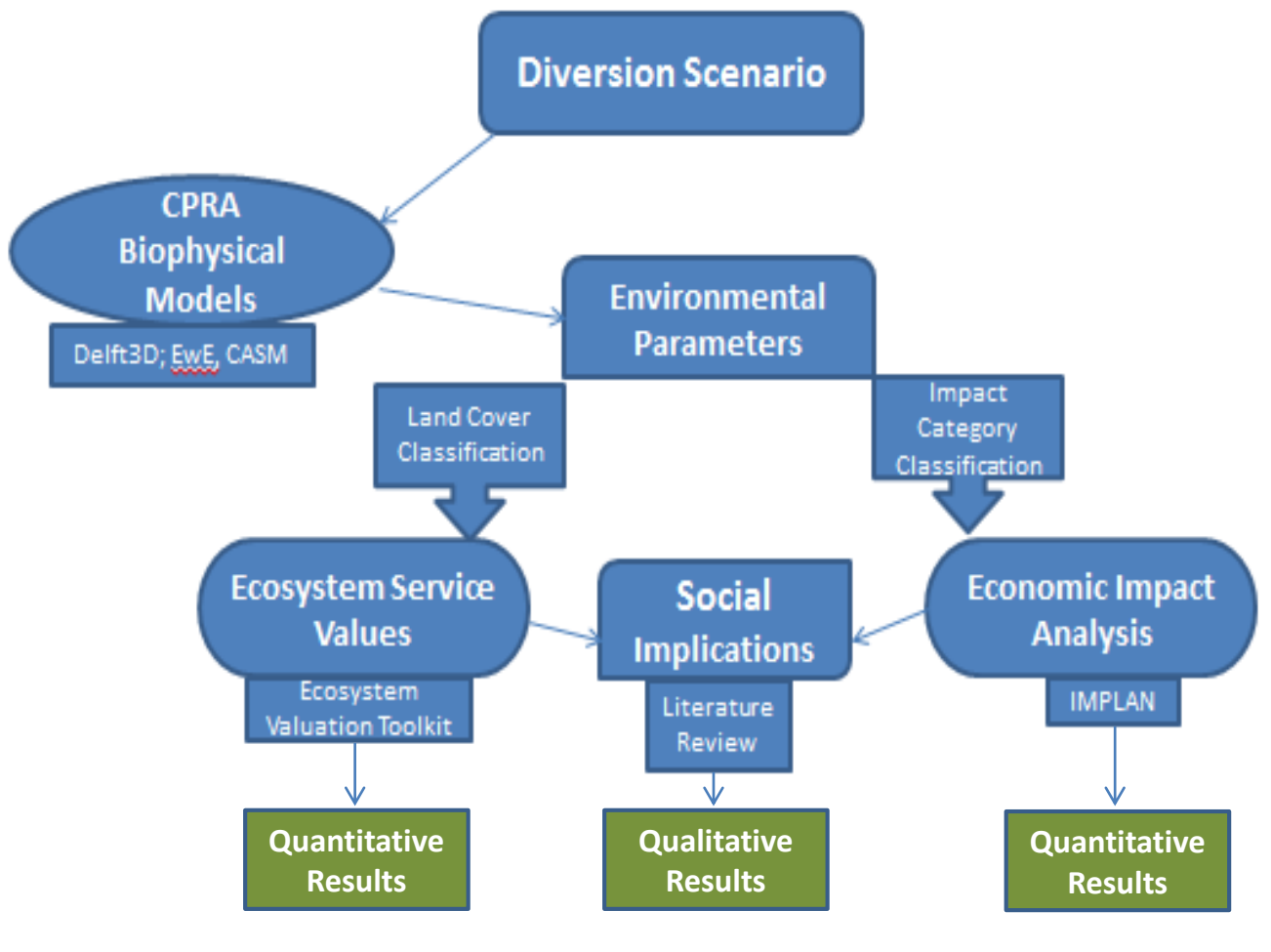
Socio-Economic Analysis Area



Biophysical Analysis Area



Overview of Methodology



Impact Categories: (1) Commercial Fisheries, (2) Water Supply, (3) Navigation, (4) Recreation, (5) Storm Protection, (6) Ecosystem Services

Scope of Analysis

Fisheries:

- 46,800 catch files (10 species)
- 720 individual IMPLAN model runs

ESV:

- 144 shapefiles (vegetation, salinity, water quality, marsh type)
- 10 parish analysis for all 144 shapefiles

Storm Protection:

- Analysis of 72 shapefiles from ESV (vegetation & marsh type)

Recreation:

- 1,440 individual IMPLAN model runs

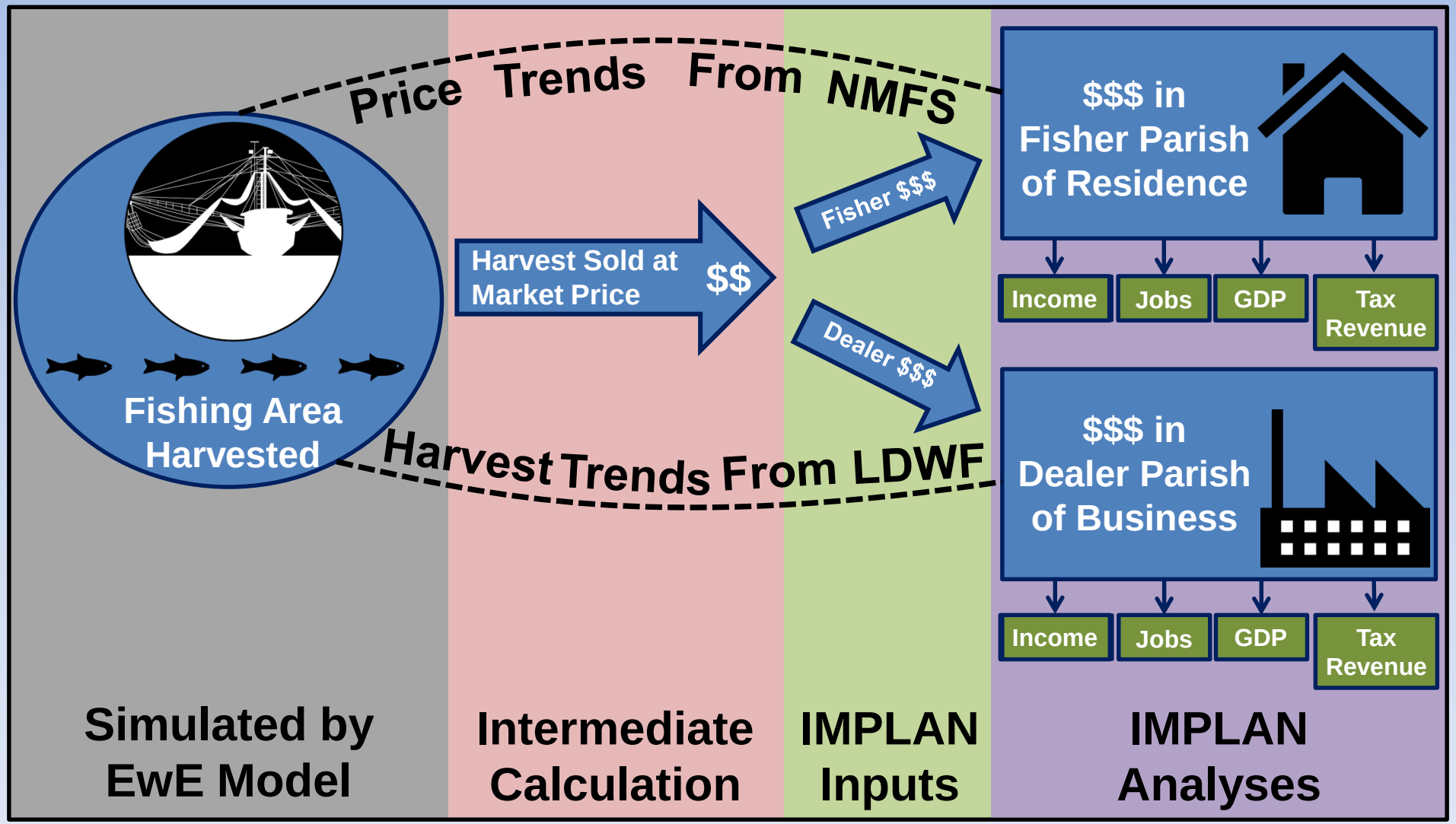
Social:

- 34 papers, includes 14 regional economic development plans

Navigation & Water Supply:

- Data processing and coordination currently underway

Commercial Fisheries Economic Impact Analysis



Fisher Harvest by Parish

All 4 Diversions Scenario: Change from Initial Conditions (Year 50)

PRELIMINARY/DRAFT

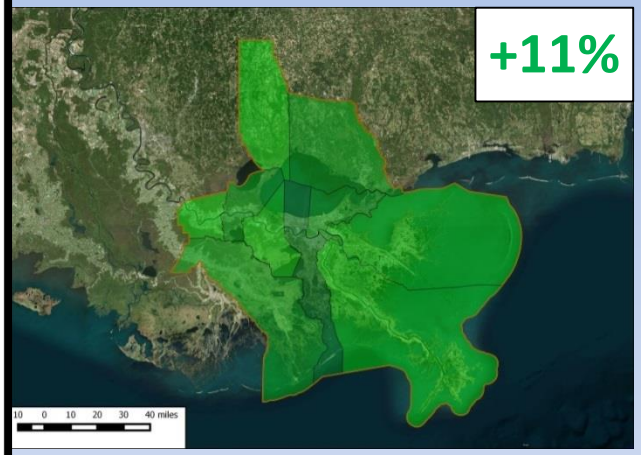
Legend

Percent Positive Change
- 0.01% - 5.00%
- 5.00% - 10.00%
- 10.00% - 15.00%
- 15.00% - 20.00%
- 20.00% - 25.00%

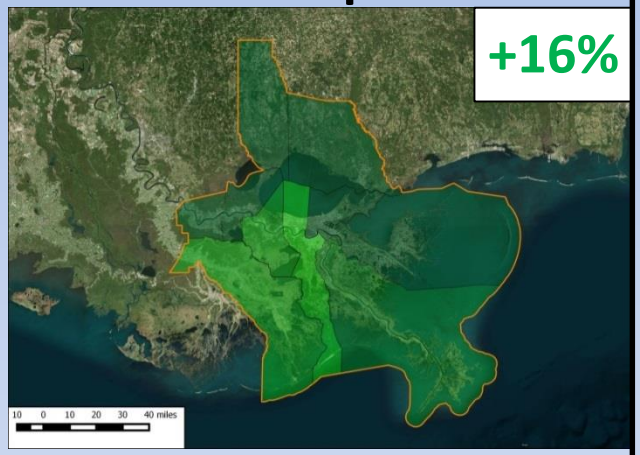
No Percent Change
- 0.00%

Percent Negative Change
- -25.00% - -20.00%
- -20.00% - -15.00%
- -15.00% - -10.00%
- -10.00% - -5.00%
- -5.00% - -0.01%
- Socio-Economic Analysis Area

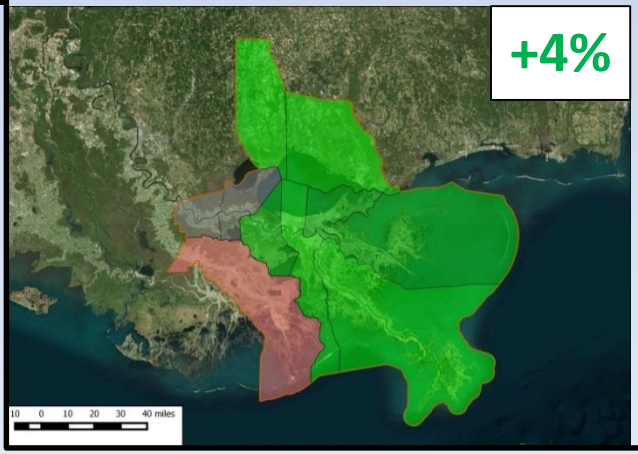
Blue Crab



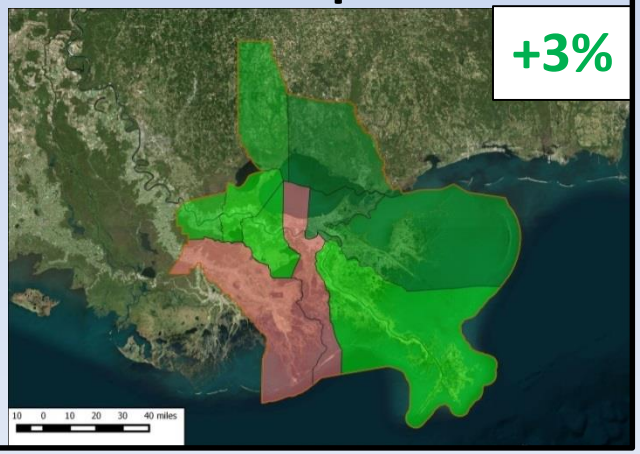
Brown Shrimp



Oyster



White Shrimp



Dealer Landings by Parish

All 4 Diversions Scenario: Change from Initial Conditions (Year 50)

PRELIMINARY/DRAFT

Legend

Percent Positive Change

- 0.01% - 5.00%
- 5.00% - 10.00%
- 10.00% - 15.00%
- 15.00% - 20.00%
- 20.00% - 25.00%
- 25.00% - 30.00%
- 30.00% - 35.00%

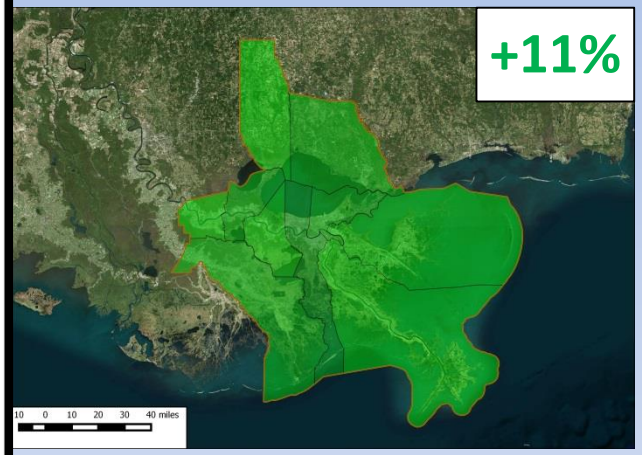
No Percent Change

- 0.00%

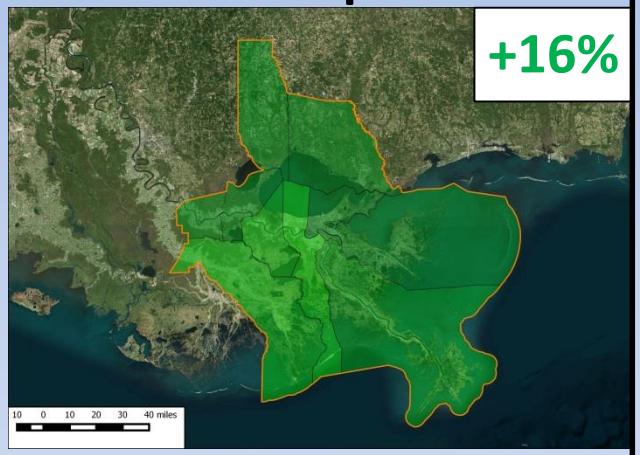
Percent Negative Change

- -35.00% - -30.00%
- -30.00% - -25.00%
- -25.00% - -20.00%
- -20.00% - -15.00%
- -15.00% - -10.00%
- -10.00% - -5.00%
- -5.00% - -0.01%
- Socio-Economic Analysis Area

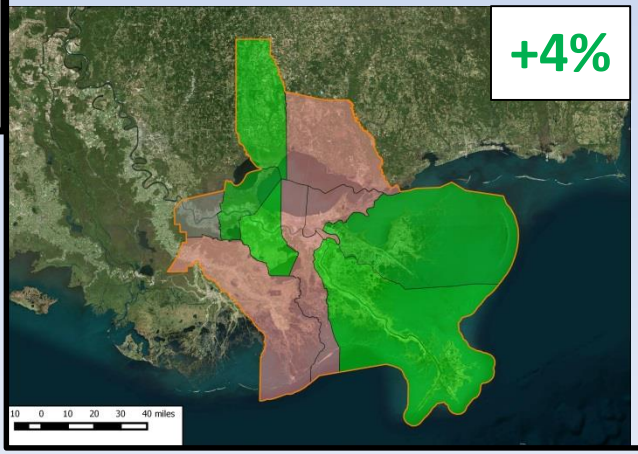
Blue Crab



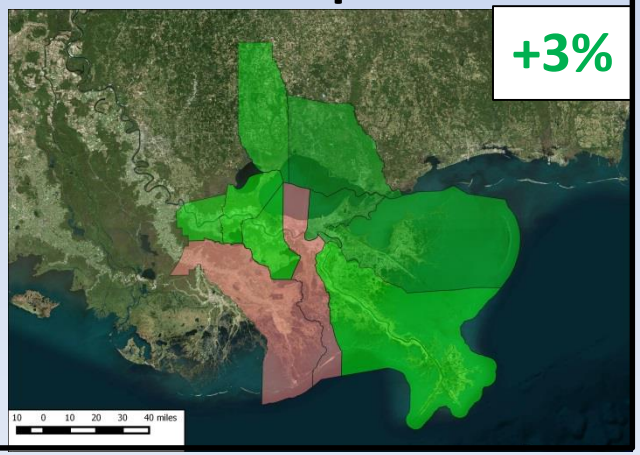
Brown Shrimp



Oyster



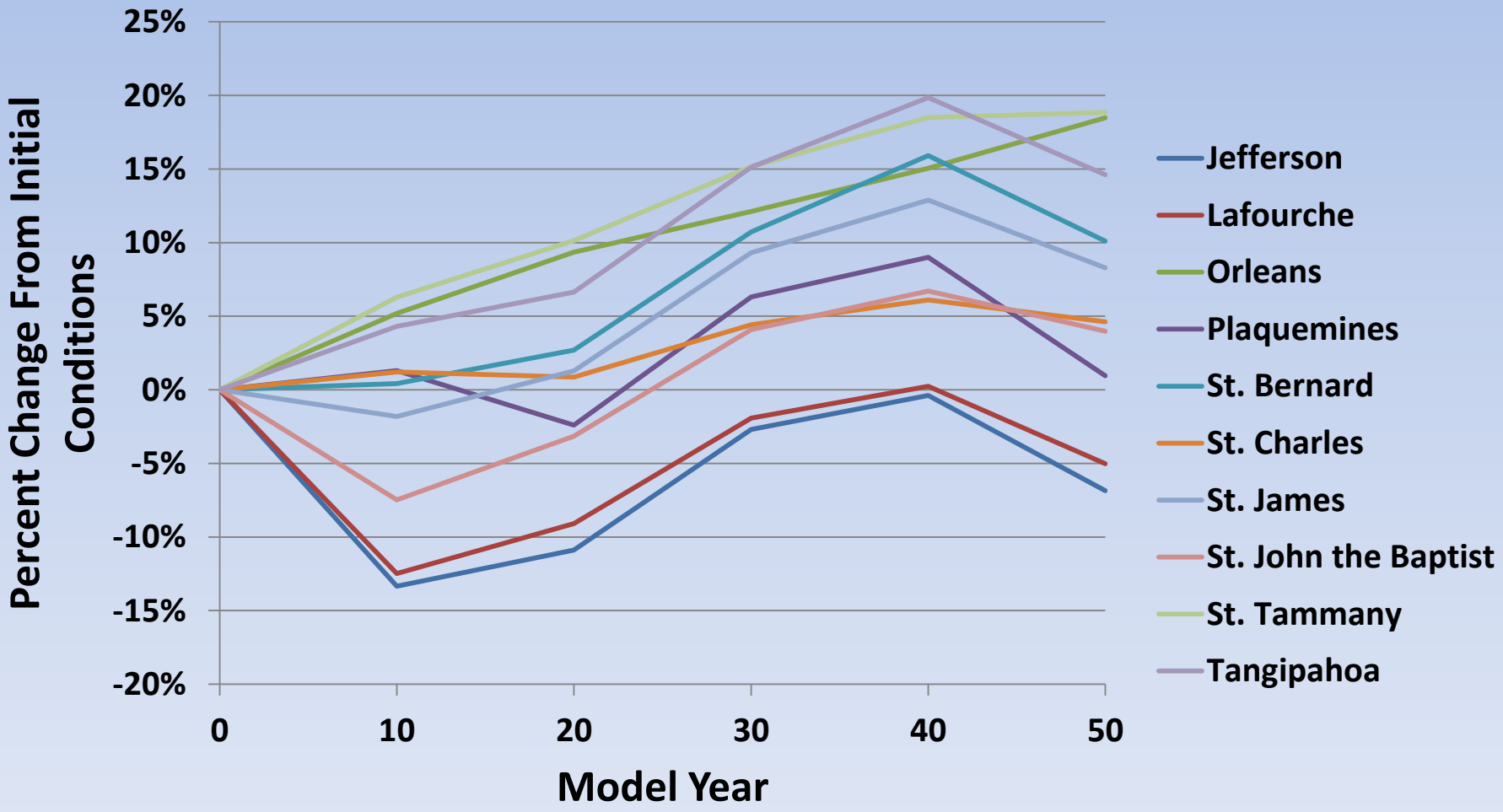
White Shrimp



Fisher Harvest: White Shrimp

All 4 Diversions Scenario: Change from Initial Conditions (Years 1-50)

PRELIMINARY/DRAFT



Fisher Harvest by Parish

All 4 Diversions Scenario: Change from Initial Conditions (Year 50)

PRELIMINARY/DRAFT

Parish/Species	Brown Shrimp (lbs)	White Shrimp (lbs)	Blue Crab (lbs)	Oyster (lbs)	Jobs*
Jefferson	8%	-7%	19%	0%	71%
Lafourche	11%	-5%	15%	-7%	80%
Orleans	23%	19%	12%	9%	92%
Plaquemines	15%	1%	8%	1%	80%
St. Bernard	23%	10%	9%	9%	95%
St. Charles	14%	5%	9%	9%	98%
St. James	23%	8%	7%	0%	84%
St. John the Baptist	22%	4%	12%	0%	90%
St. Tammany	24%	19%	12%	2%	98%
Tangipahoa	22%	15%	9%	2%	0%
Total:	**16%**	**3%**	**11%**	**4%**	**86%**

***Including black drum, blue crab, brown shrimp, flounder, menhaden, oyster, white trout, striped mullet, and white shrimp**

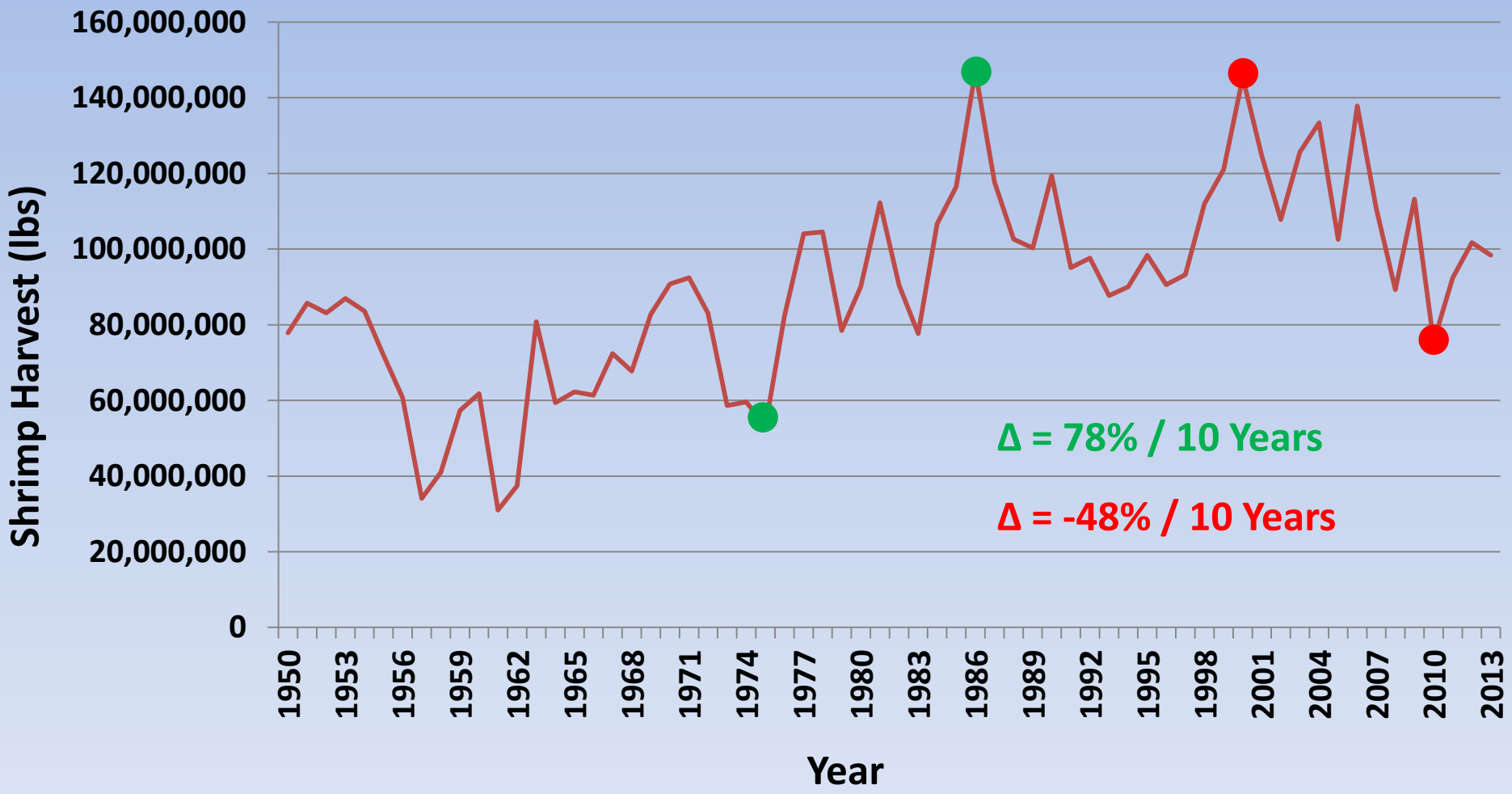
Dealer Landings by Parish

All 4 Diversions Scenario: Change from Initial Conditions (Year 50)

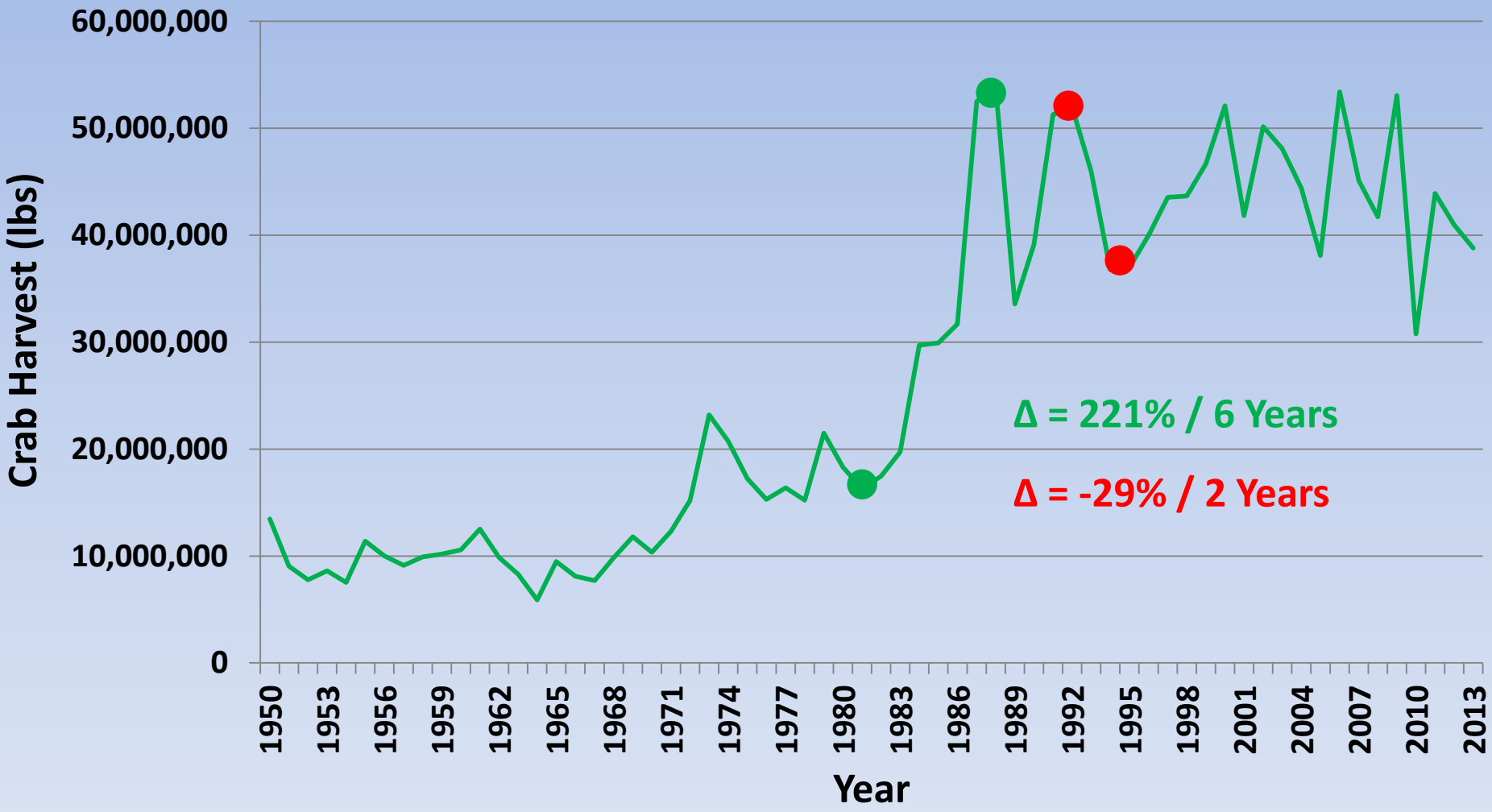
PRELIMINARY/DRAFT					
Parish/Species	**Brown Shrimp (lbs)**	**White Shrimp (lbs)**	**Blue Crab (lbs)**	**Oyster (lbs)**	**Jobs***
Jefferson	3%	-18%	19%	-3%	62%
Lafourche	14%	-7%	14%	-2%	86%
Orleans	28%	23%	13%	-1%	91%
Plaquemines	18%	8%	8%	3%	83%
St. Bernard	23%	10%	7%	10%	96%
St. Charles	1%	8%	10%	3%	93%
St. James	19%	-1%	3%	0%	84%
St. John the Baptist	34%	22%	12%	14%	114%
St. Tammany	28%	25%	13%	-2%	100%
Tangipahoa	27%	19%	10%	10%	99%
Total:	**16%**	**3%**	**11%**	**4%**	**85%**

***Including black drum, blue crab, brown shrimp, flounder, menhaden, oyster, white trout, striped mullet, and white shrimp**

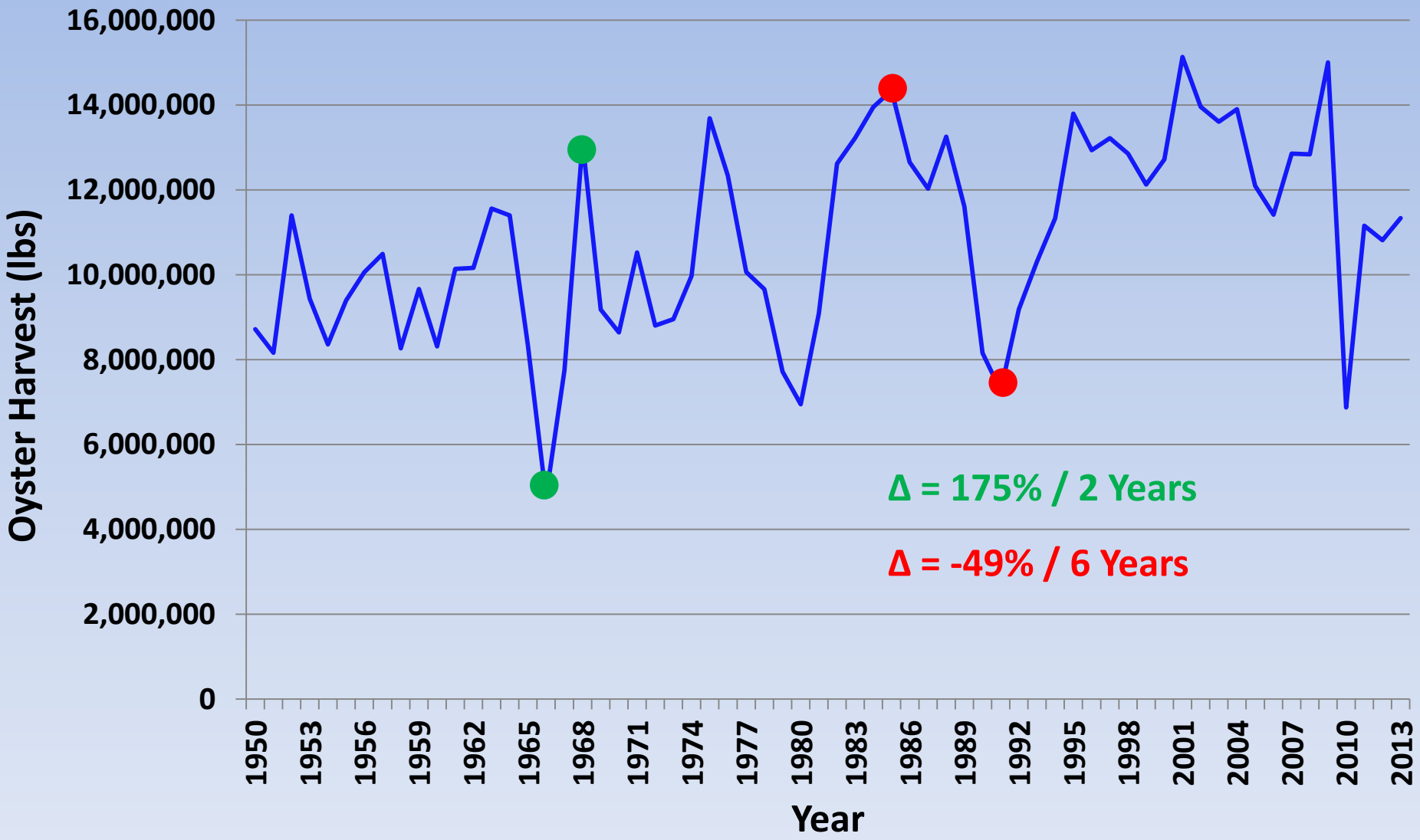
Historic Statewide Shrimp Harvest (lbs)



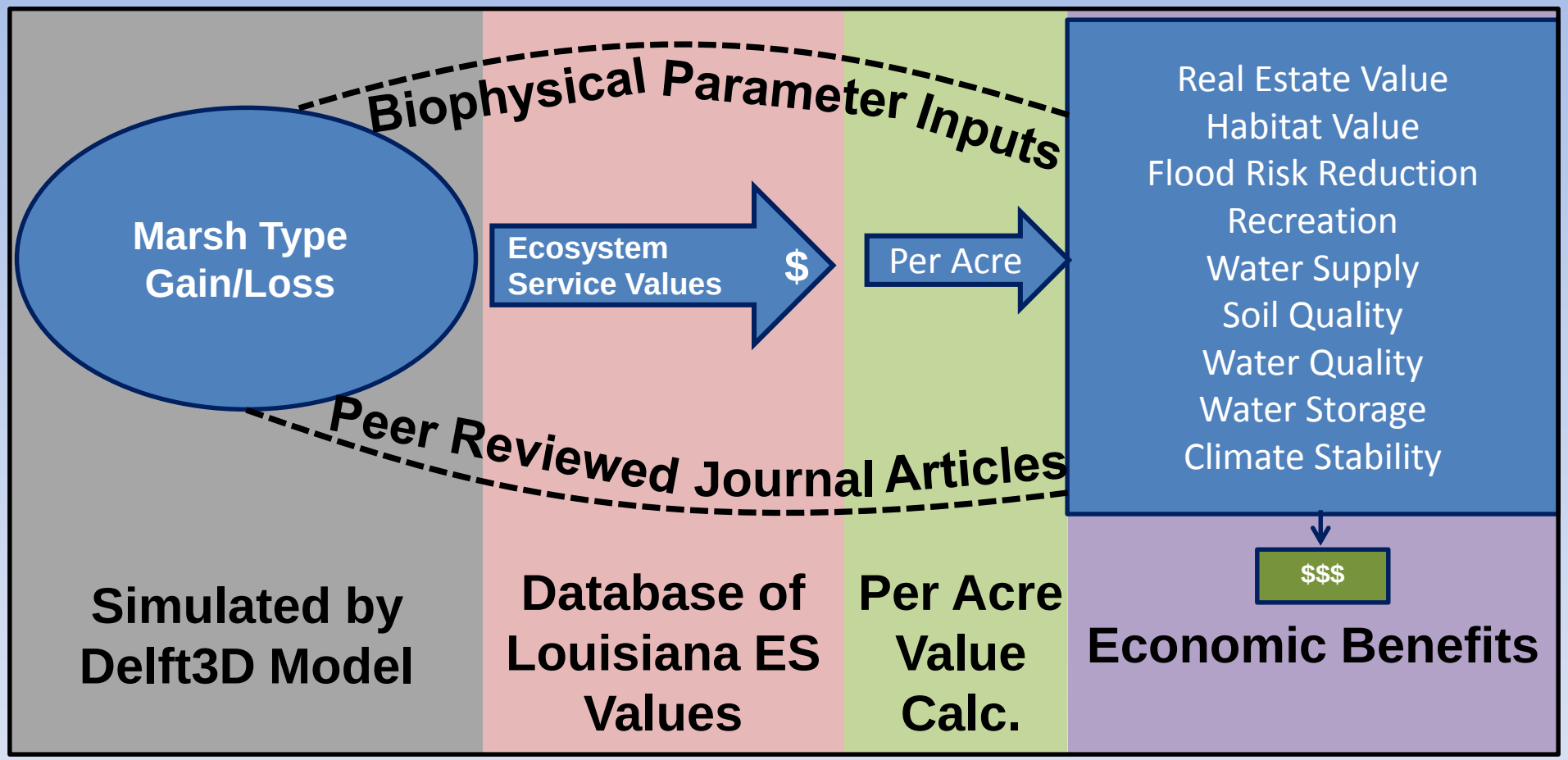
Historic Statewide Crab Harvest (lbs)



Historic Statewide Oyster Harvest (lbs)



Ecosystem Service Valuation



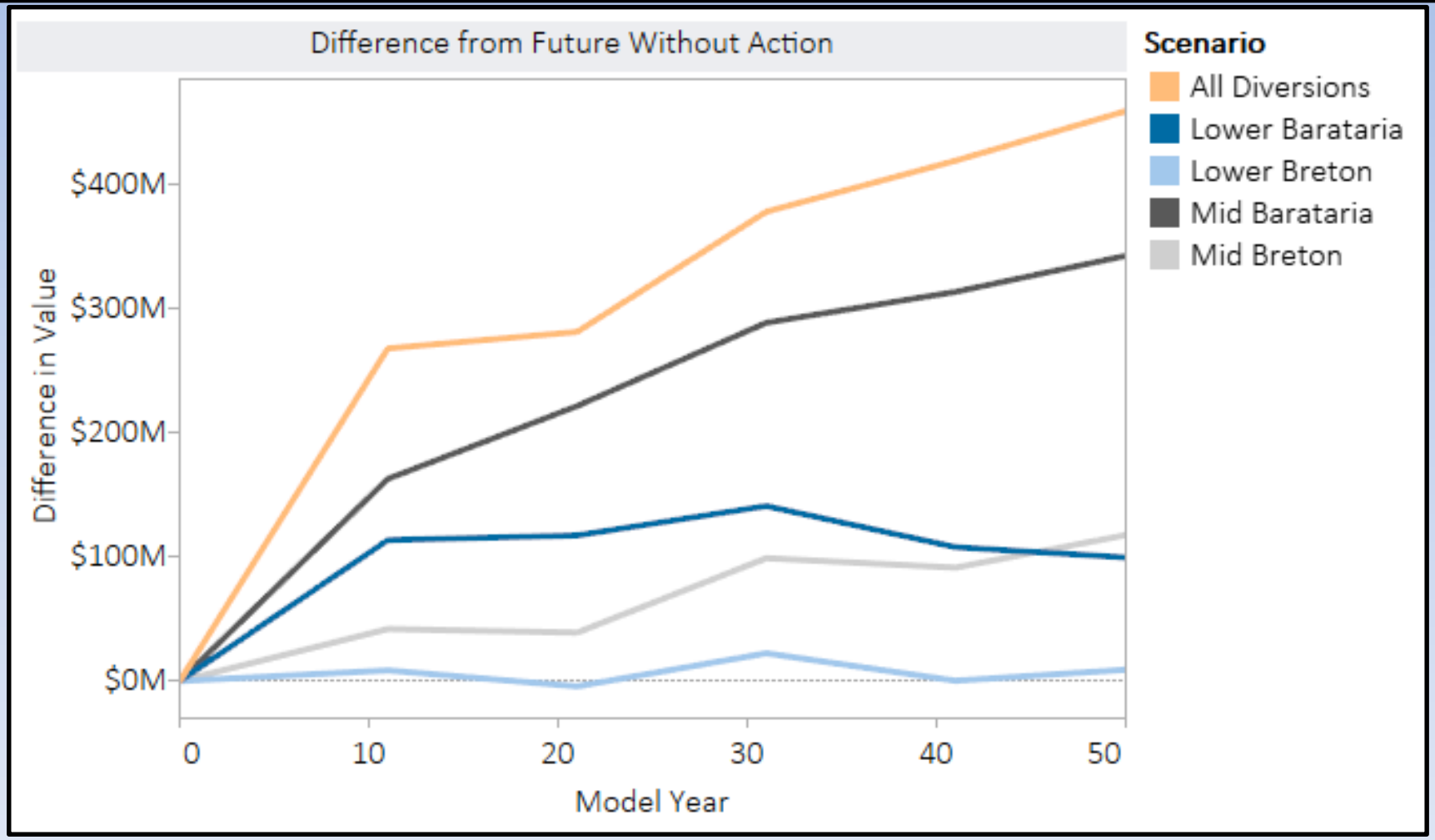
Ecosystem Services Provided by the Delta's Wetlands

Ecosystem Service	Fresh Wetlands	Brackish Wetlands	Saline Wetlands	SAV
Flood regulation	High	Medium	Low	Low
Habitat	High	High	Medium	Medium
Real Estate Value	Medium	Medium	Medium	N/A
Recreation	High	Medium	Low	Low
Soil Quality	High	Medium	Medium	High
Water Supply	High	N/A	N/A	N/A
Water Quality	High	Medium	Low	High
Water Storage	High	Medium	Low	Low
Climate Stability	Medium	High	Low	Low
Storm Buffering	High	High	High	Medium

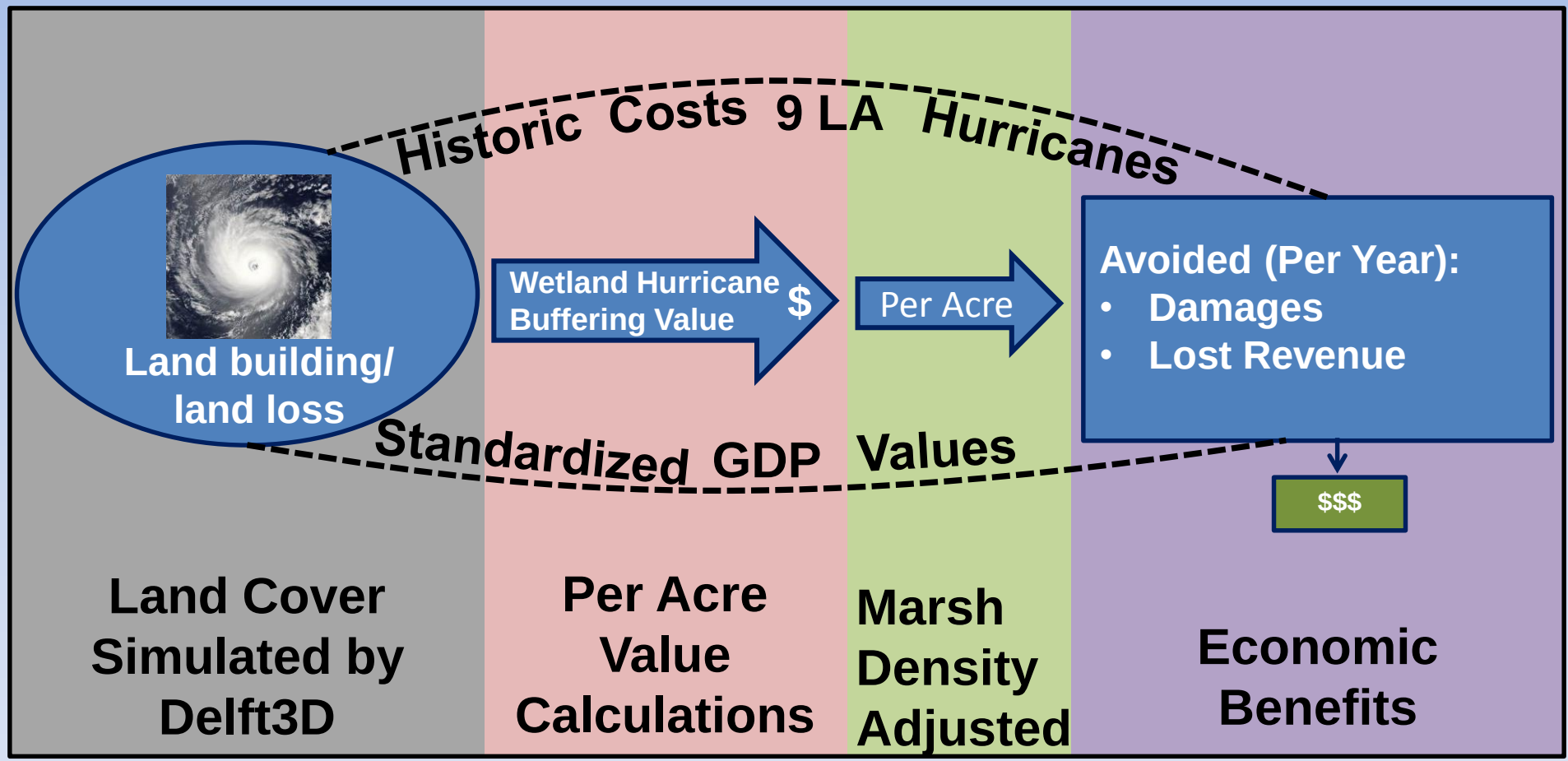
Values taken from peer-reviewed literature

Ecosystem Service Valuation
All Marsh Types

PRELIMINARY/DRAFT

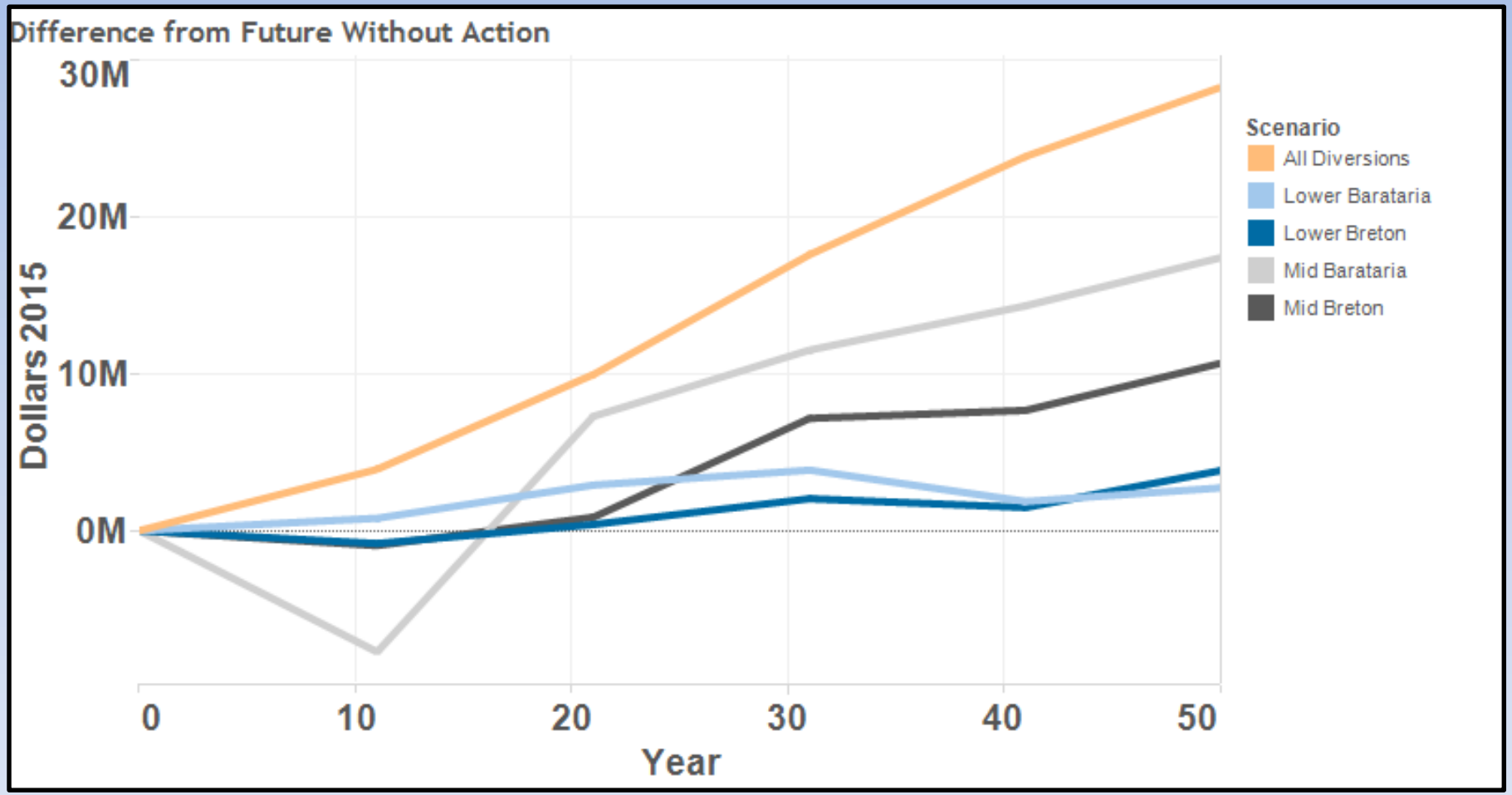


Storm Protection Impact Category



Storm Protection Avoided Cost

PRELIMINARY/DRAFT



Remaining Work

- Results for Commercial Fisheries, Storm Protection, and Ecosystem Service Valuation Impact Categories will be finalized.
- Assessment of Water Supply, Recreation, and Navigation, Impact Categories will be performed.
- Social interpretations for all Impact Categories

Potential for analysis of Mid Breton + Mid Barataria as an additional scenario.

Timeline

December 2014: Project Kickoff

January 2015: Literature Review Complete

January - July 2015: Framing of Socio-Economic Analysis Methods

August - December 2015: Perform Socio-Economic Analysis of Six Diversion Scenarios

October 2015: Preliminary Outputs

December 2015: Final Report