
Recreational Impacts of Coastal Restoration Projects in Louisiana

National Conference on Ecosystem Restoration

Baltimore, MD

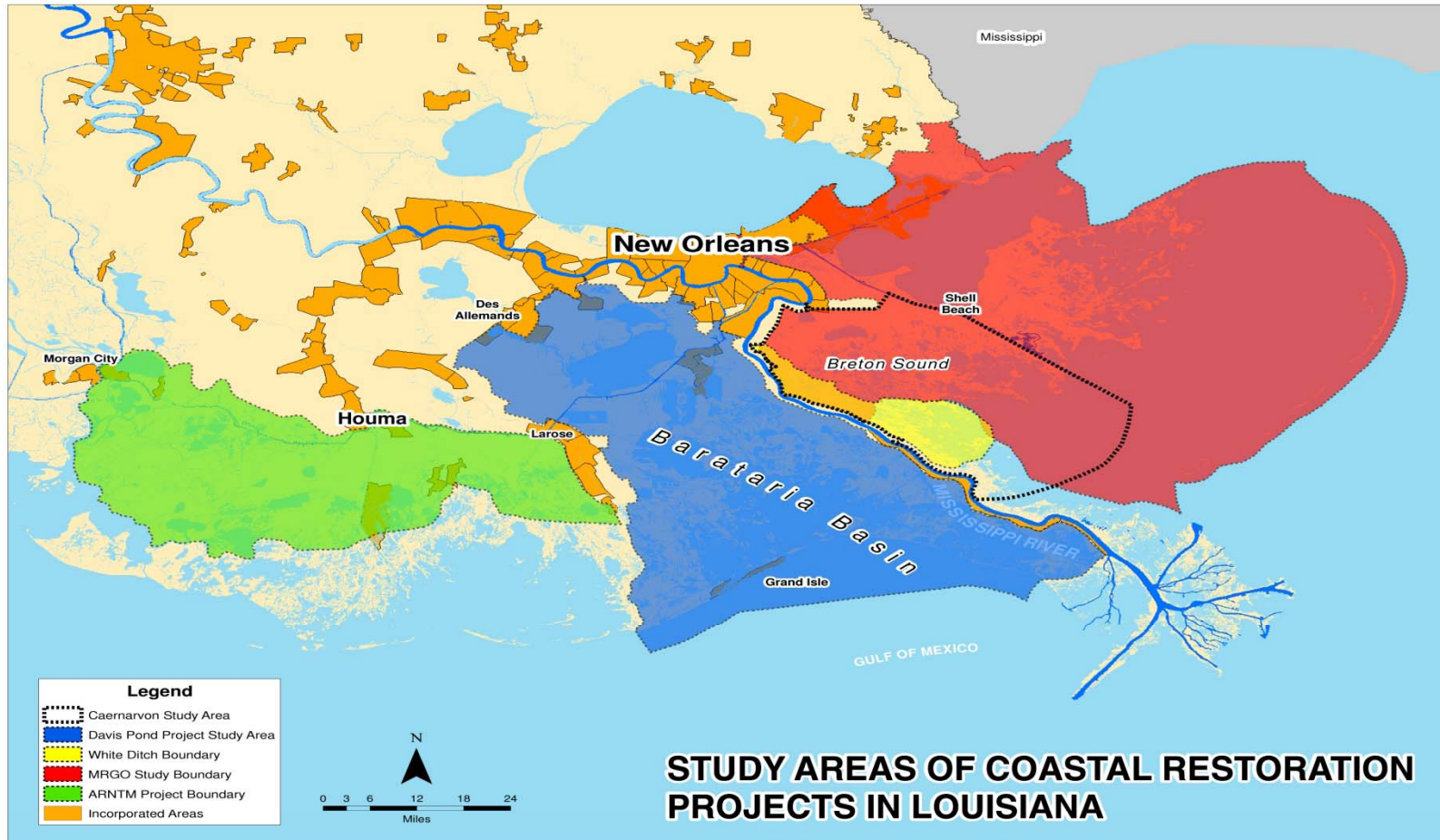
Joseph Berlin and Andrew Perez

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Recreational Impacts were Estimated for Five Projects

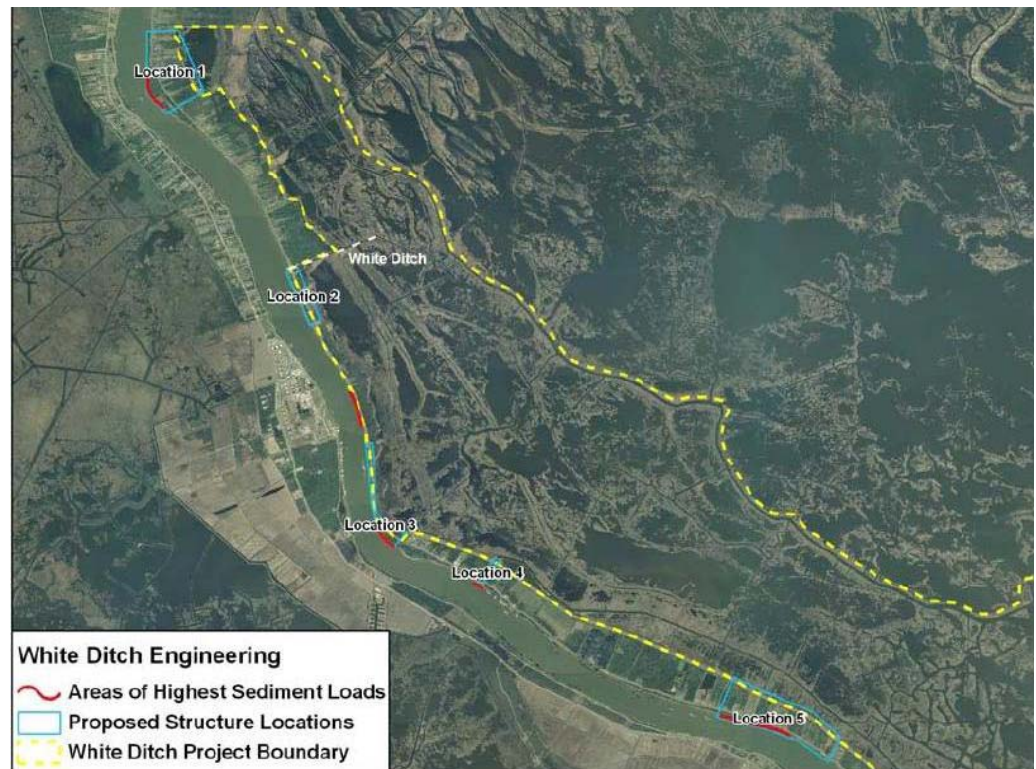
- White Ditch Sediment Diversion
 - Atchafalaya Freshwater Conveyance
 - MRGO Ecosystem Restoration
 - Davis Pond Freshwater Diversion – Ops Plan
 - Caernarvon Freshwater Diversion – Ops Plan
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Location of the Five Coastal Restoration Projects



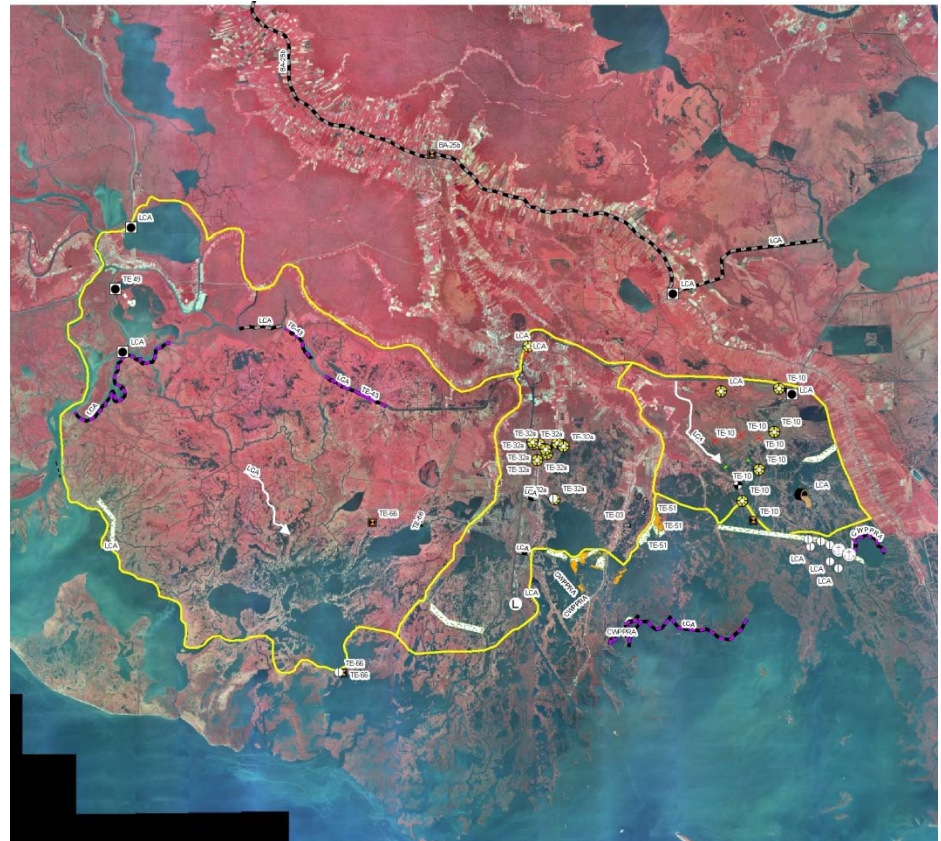
White Ditch Sediment Diversion

- Mississippi River East Bank
- South of New Orleans
- One Feature - a Structure
- Four Alternative Diversion Flows



Atchafalaya Freshwater Conveyance

- Northern Lafourche Parish
- Several Features
- Features combined into Seven Alternatives



MRGO Ecosystem Restoration

- Large Study Area
- Many Features
- Features Combined into Seven Alternatives



Stages of a Federal Project

- Reconnaissance Study
 - **Feasibility Study – Alternative Selection**
 - Preconstruction Engineering and Design
 - Construction
 - Operation and Maintenance
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- Recreation Impacts must be Quantified in Feasibility Study for Environmental Projects
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Three Approved Procedures to Measure National Economic Development Benefits

NED = Net Welfare Increase for Nation

- Travel Cost Method
 - Requires Detailed Data for Travel Expenses / Travel Distances
 - Contingent Valuation
 - Requires Surveys of Recreational Users for Willingness to Pay
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Three Approved Procedures to Measure Economic Benefits of Recreation

- Unit Day Values (FY 10)
 - Based Upon Specified Criteria to Determine Value of Recreation Day
 - Four Criteria must be Satisfied to Use UDV
 - General Fishing and Hunting - \$5.15 to \$10.75 per day
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Criteria for Estimating Unit Day Values

- Recreation Experience
 - Number of Activities
- Availability of Opportunity
- Carrying Capacity
- Accessibility
- Environmental
 - Esthetics



Data Available from Davis Pond and Caernarvon Diversions

- Freshwater Discharge Rates from the Davis Pond and Caernarvon Diversions
 - Salinity Measurements
 - LaDWF Creel Surveys
 - Aerial Waterfowl Surveys
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Creel Fishing Surveys

- Intercept Survey
Performed by LaDWF
- Species Sought
 - Several Species Dominate
 - Speckled Trout and Red Drum (Saltwater)
 - Largemouth Bass (Freshwater)
- Species Caught -
Number and Size
- Perception of Trip



Data Sources Used To Estimate the Number of User Days

- Statewide Comprehensive Outdoor Recreation Plan (SCORP)-Participation Rate
 - Participation Rate for Fishing, Hunting and Wildlife Watching
 - Department of Wildlife and Fisheries
 - Hunting and Fishing Licenses Issued
 - Boats Registered
 - Boat Launches Surveyed (Location and Size)
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Process of Estimating Benefits

- A Focus Group was Held for Each Project to Obtain Expert Opinions
 - Various Interest Groups Participated in Focus Groups
 - Sportsmen
 - Conservation Groups
 - Government Agencies
 - Major Landowners
 - Project Details were presented to the Focus Group
 - Restoration Measures were Explained
 - Historic Impacts of Diversions were Presented
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Focus Group Findings

- Wildlife Watching may Increase
 - Users are Flexible about Location
 - Users are not Flexible about Activities
 - Hunting and Fishing Remain the Primary Recreation Activities
 - Users will not Change Fish Species Sought
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Specific Focus Group Concerns

- Oyster Reefs are Important to Recreational Fishing
- Floating Marsh is Important to Waterfowl Hunting
- Floodgate Operation is Important to Marina Operators



Coastal Restoration Projects

Recreation Impacts

- Freshwater Diversions Impact Salinity and Cause Fish Migrations
 - Waterfowl Populations are Highly Variable but are Reduced by Water Turbidity
 - Subaquatic Vegetation Impairs User Access
 - Spawning may be Impacted
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Difficulties in Estimating Impacts

- Wildlife Watching is Difficult to Measure
 - Number of Users in Study Area is Difficult to Determine
 - Users can Shift Between Areas
 - Most Areas in Coastal Louisiana have Proposed Restoration Projects
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Recreation Benefits Model

Atchafalaya Conveyance Alternatives

- Alt 1 – Utilize Flow Management to Maximize Benefits of Existing Flow
 - Alt 2 - Increase Atchafalaya Inflows and Utilize Flow Management
 - Alt 3 – Grand Bayou Pump and Utilize Flow Management
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Recreation Benefits Model

Atchafalaya Conveyance Alternatives

- Alt 4 – Increase Atchafalaya Inflows, Grand Bayou Pump and Utilize Flow Management
 - Alt 5 - Increase Atchafalaya Inflows, and Utilize Grand Bayou Dredging
 - Alt 6 – Houma Navigation Lock Management
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Unit Day Value Point System

General Recreation EGM 10-03					
Criteria	Judgement Factors / Points				
Recreation Experience	Number of activities				
	0 - 4	5 - 10	11 - 16	17 - 23	24 - 30
Availability of Opportunity	Likelihood of success				
	0 - 3	4 - 6	7 - 10	11 - 14	15 - 18
Carrying Capacity	Facilities' conditions				
	0 - 2	3 - 5	6 - 8	9 - 11	12 - 14
Accessibility	Access to Recreation Site				
	0 - 3	4 - 6	7 - 10	11 - 14	15 - 18
Environmental	Esthetic Quality				
	0 - 2	3 - 6	7 - 10	11 - 15	16 - 20

Points from the five criteria change over time according to the services provided by the ecosystem and the recreational infrastructure

Monetary Benefit Estimations – Atchafalaya Conveyance

Study Area - Number of Unit Value Days - Year 10

	Without Project	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Number of Unit Value Days	665,020	665,020	665,020	665,020	665,020	665,020

Study Area General Fishing and Hunting Recreation Points - Year 10

	Without Project	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Recreation Experience	23	23	23	23	23	23
Availability of Opportunity	14	16	17	16	15	13
Carrying Capacity	10	10	10	10	10	10
Accessibility	11	11	11	11	11	11
Environmental	15	15	16	15	15	14
Total Points	73	75	77	75	74	71
Unit Day Value	\$9.72	\$9.86	\$9.99	\$9.86	\$9.79	\$9.59

Total Annual Monetary Value

	\$6,464,657	\$6,553,770	\$6,642,882	\$6,553,770	\$6,509,214	\$6,375,545
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Increased Recreation Benefits Atchafalaya Conveyance (\$)

	Without Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Net Present Value		2,077,000	2,799,000	1,588,000	1,505,000	252,000	190,000
Annualized Benefit	0	102,505	138,137	78,371	74,275	12,437	9,377

Recreation Benefits Model

Conclusion

- A Consistent Method of Measuring Impacts
 - Standardized Values of Recreation Days
 - Annualizes Benefits over Project Period
 - Based Upon National Economic Development (NED) Procedures
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