

# Restoration Efficacy Assessment of Louisiana

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Coalition to Restore Coastal Louisiana



# Why Monitor?

Provides quantifiable evidence of project **success**

Improves **accountability** and **planning**

# R.E.A.L. Goals

Identify parameters for project success

Develop methodology for assessing progress

Land change

Timeliness of construction

Share methodology with other organizations and agencies

# How?

Develop GIS method for assessing land change

Accumulate project data

Fill in gaps in monitoring, where applicable and possible



# National Centers for Environmental Information

NOAA's National Centers for Environmental Information (NCEI) hosts and provides public access to one of the most significant archives for environmental data on Earth. Through the Center for Weather and Climate and the Center for Coasts, Oceans, and Geophysics, we provide over 25 petabytes of comprehensive atmospheric, coastal, oceanic, and geophysical data.

[Read more about NCEI](#)



Weather and Climate



Coasts



Oceans



Geophysics

# Case Study

10 mi



BA-0058 : Fringe Marsh Repair  
Marsh Creation  
Plaquemines Parish

Area: 1,183,000 m<sup>2</sup> (~300 acres)

Acres benefitted: 300

Year completed : 2014

Cost: \$8,756,605

# Data Collection

CPRA Master Plan >  
Appendix A

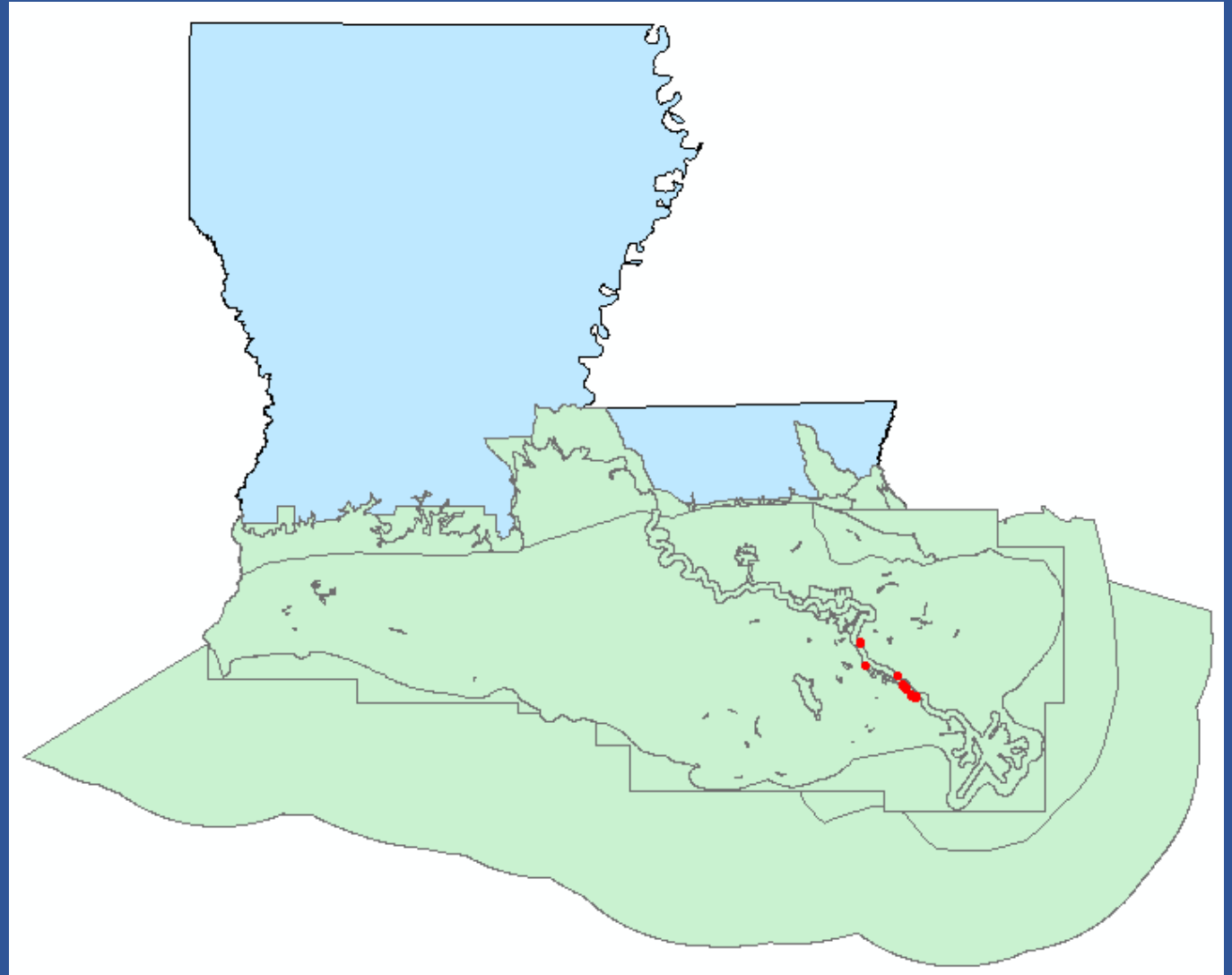
CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description
CIAP	Fringe Marsh Repair	BA-0058	MC	USFWS	PLAQUEMINES	300	N/A	2014	\$8,756,605	This program involves the reestablishment of approximately 300 acres of critical areas of fragile marsh in lower Plaquemines Parish to help minimize the continued fragmentation of wetlands system throughout the coast.

# Project Area

CPRRA Data Library >  
CPRRA shapefiles

5 projects in Barataria  
Basin

2 projects in Breton  
Sound Basin





# Aerial Imagery

**USGS >  
Earth Explorer**

**Years Available:**

1984

1989

1994

1996

1999

2004

2005

2006

2008

2009

2010

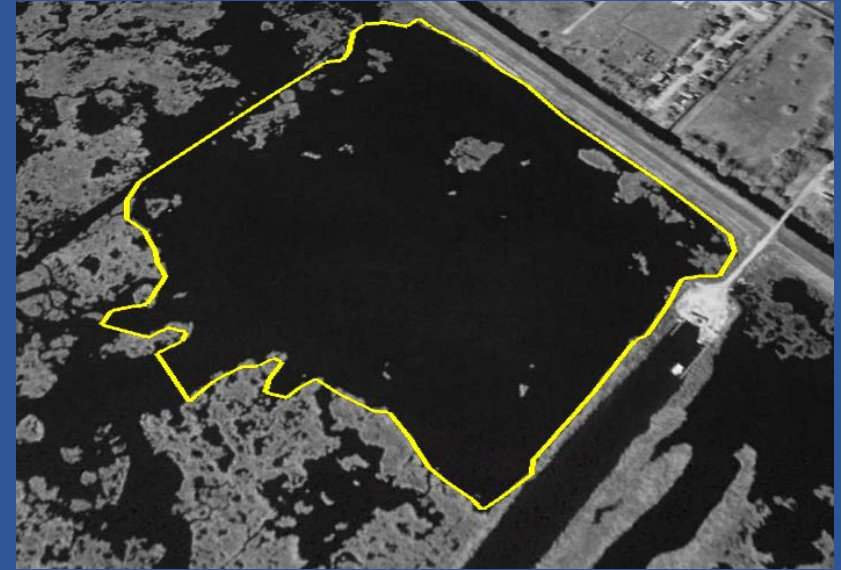
2012

2014

2015

2016

**1984**



**2016**



# GIS Methodology

1. Define project boundary shape on aerial image
2. Assign land/water classification to individual image pixels
3. Repeat for each available year of imagery
4. Evaluate for change between year sets

Before construction > During Construction > After Construction

# BA-0058 Land Change Assessment

Before Construction:

Average of -12 acres land change per year

During Construction:

Average of -8 acres land change per year

After Construction:

Average of +4 acres land change per year

Without Project :

25 years to lose 300 acres

With Project :

75 years to regain 300 acres

# Construction Timing

Authorization 2010

Begin Construction 2012

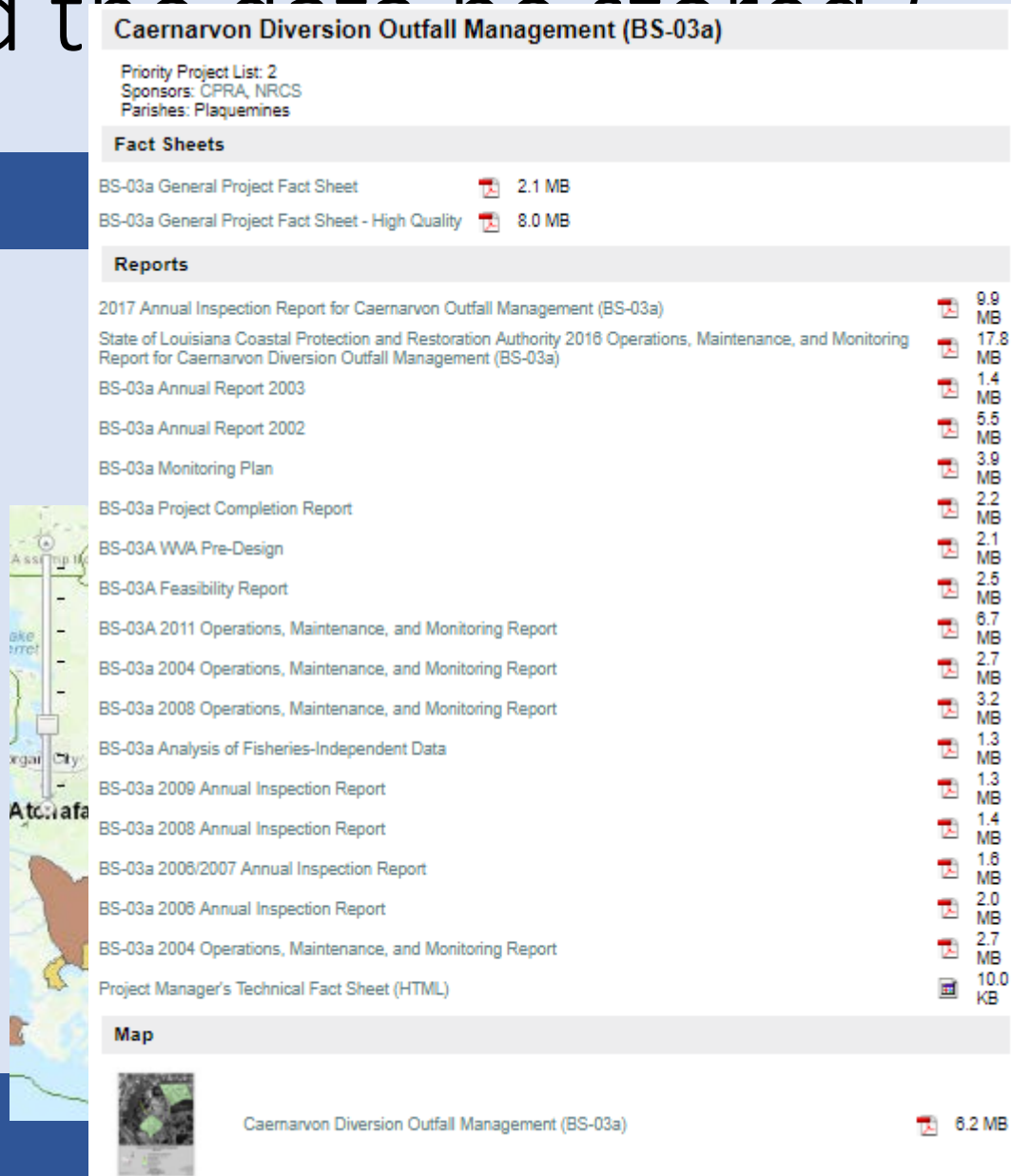
Construction Complete 2014

4 years total

# How should the data be stored?

R.E.A.L. report

Monitoring Platform



**Caernarvon Diversion Outfall Management (BS-03a)**

Priority Project List: 2  
Sponsors: CPRA, NRCS  
Parishes: Plaquemines

**Fact Sheets**

BS-03a General Project Fact Sheet	2.1 MB
BS-03a General Project Fact Sheet - High Quality	8.0 MB

**Reports**

2017 Annual Inspection Report for Caernarvon Outfall Management (BS-03a)	9.9 MB
State of Louisiana Coastal Protection and Restoration Authority 2016 Operations, Maintenance, and Monitoring Report for Caernarvon Diversion Outfall Management (BS-03a)	17.8 MB
BS-03a Annual Report 2003	1.4 MB
BS-03a Annual Report 2002	5.5 MB
BS-03a Monitoring Plan	3.9 MB
BS-03a Project Completion Report	2.2 MB
BS-03A WWA Pre-Design	2.1 MB
BS-03A Feasibility Report	2.5 MB
BS-03A 2011 Operations, Maintenance, and Monitoring Report	6.7 MB
BS-03a 2004 Operations, Maintenance, and Monitoring Report	2.7 MB
BS-03a 2008 Operations, Maintenance, and Monitoring Report	3.2 MB
BS-03a Analysis of Fisheries-Independent Data	1.3 MB
BS-03a 2009 Annual Inspection Report	1.3 MB
BS-03a 2008 Annual Inspection Report	1.4 MB
BS-03a 2006/2007 Annual Inspection Report	1.6 MB
BS-03a 2006 Annual Inspection Report	2.0 MB
BS-03a 2004 Operations, Maintenance, and Monitoring Report	2.7 MB
Project Manager's Technical Fact Sheet (HTML)	10.0 KB

**Map**

Caernarvon Diversion Outfall Management (BS-03a) 6.2 MB

# Acknowledgements

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