

# Ship Shoal and the Caminada Headland Beach and Dune Restoration Project, Louisiana

Michael Miner

Bureau of Ocean Energy Management  
Gulf of Mexico Region  
Marine Minerals Program

*Restoring and Protecting Our Nation's Coasts through Stewardship of OCS Resources*

We are the only Agency responsible for managing development of OCS marine mineral resources.

- Hard Mineral Competitive Leasing
  - Gold, Rare Earth Minerals, Copper, Zinc, Silver
- Competitive Sand Leasing (aggregate industry)
- **Noncompetitive Negotiated Agreement for Public Works Sand Conveyance**



“The Secretary may negotiate with any person an agreement for the use of Outer Continental Shelf sand, gravel and shell resources—

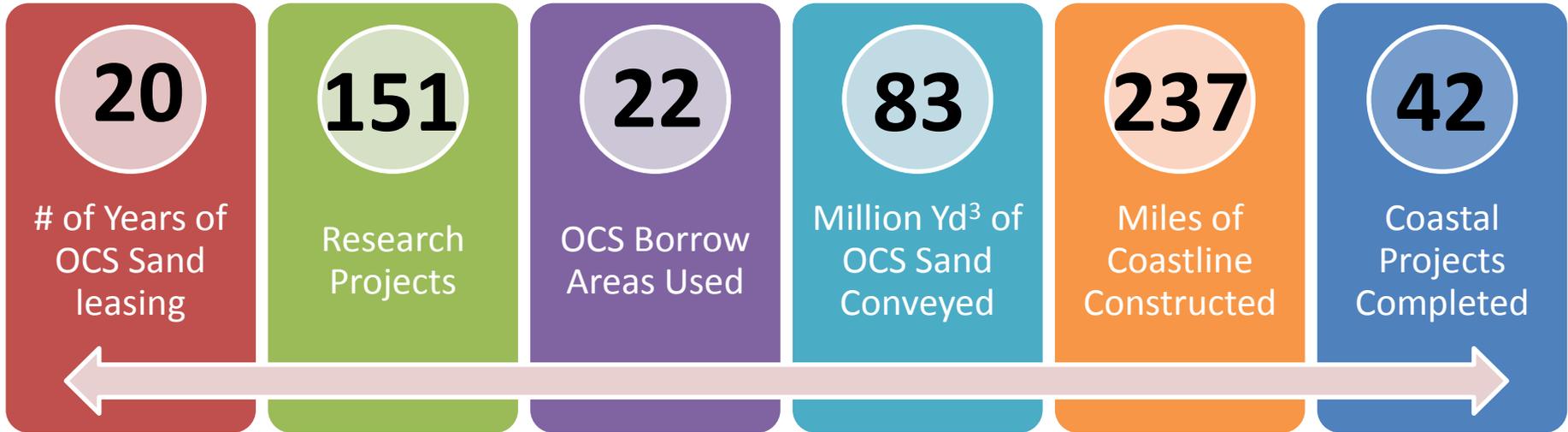
for use in a program of, or project for, shore protection, beach restoration, or coastal wetlands restoration undertaken by a Federal, State, or local government agency...”



**(Outer Continental Shelf Lands Act)**



# Two Decades of OCS Sand Stewardship



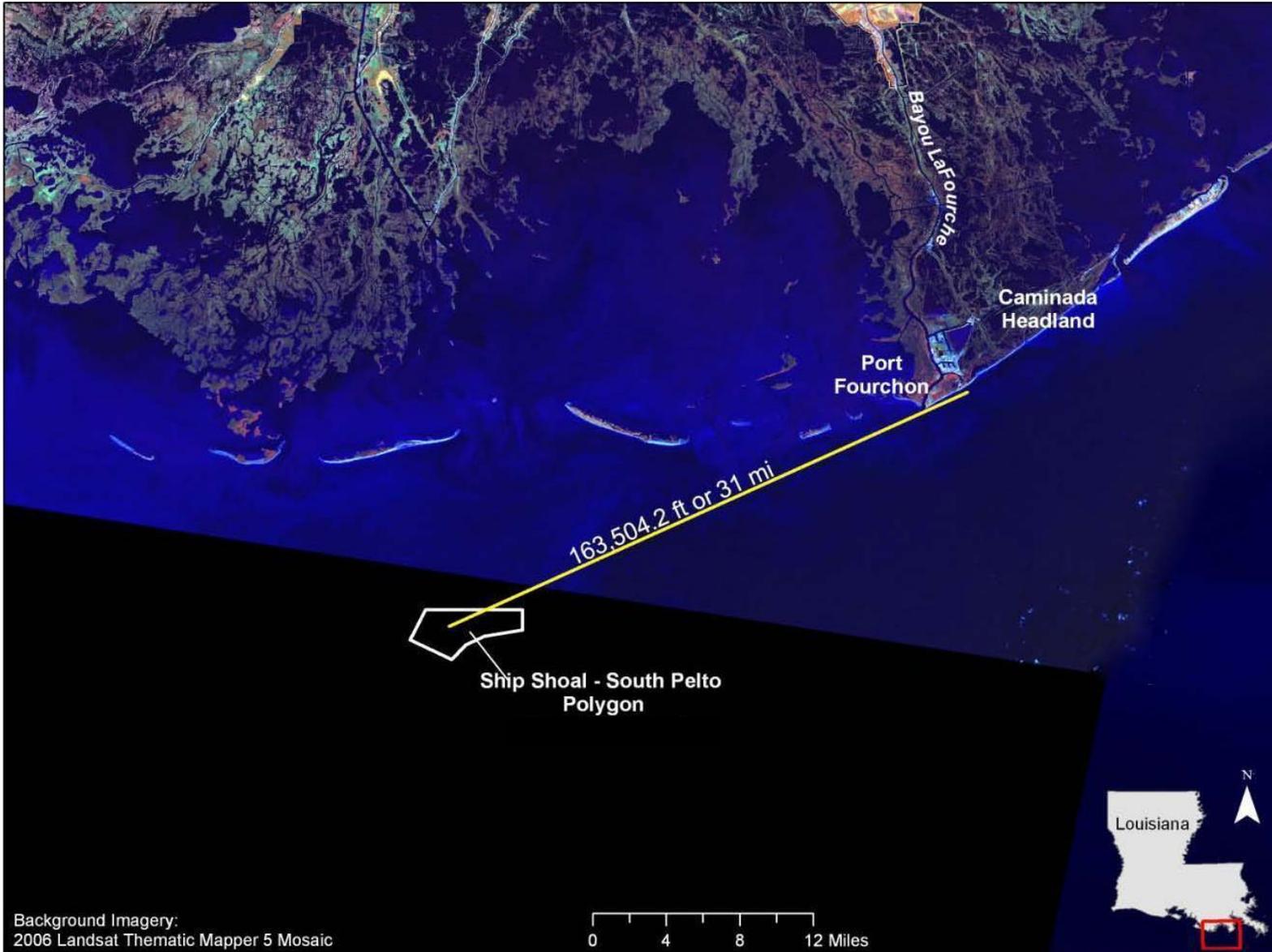
Pelican Island, Louisiana before and after



## FY 13- FY 14 Gulf of Mexico OCS Sand Projects

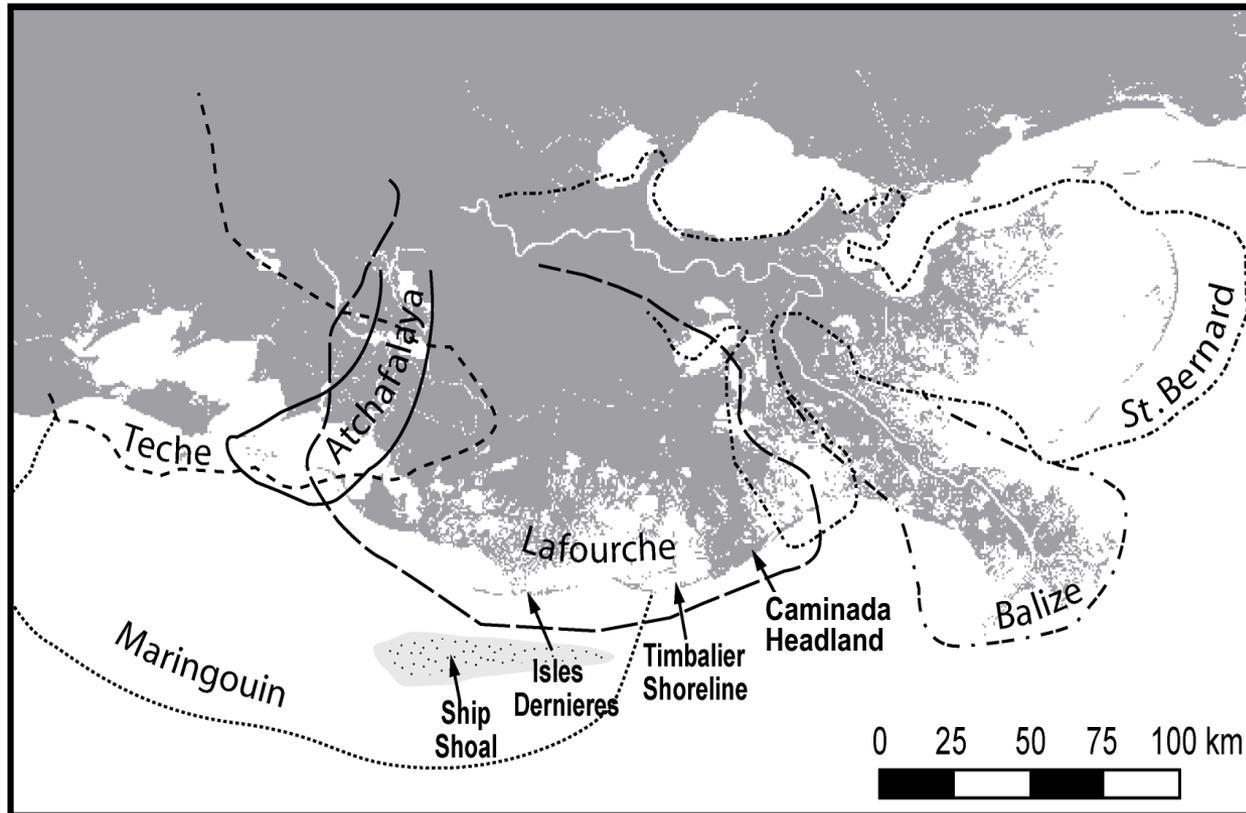
Project	Lead Agency	Sand Volume (yd <sup>3</sup> )	Status
Raccoon Island, LA	NRCS	1.2 million	Complete 3/13
Pelican Island, LA	NOAA-NMFS	5.5 million	Complete 2/13
Cameron Parish Shoreline, LA	LA CPRA	5 million	Complete 3/14
Caminada Headland Increment 1, LA (CIAP)	LA CPRA	5.2 million	Construction began 8/13
Caminada Headland Increment 2, LA (NFWF)	LA CPRA	6.2 million	BOEM Lease issued 3/14
MsCIP Gulf Islands National Seashore, MS	USACE	5-11 million	Environmental Review
Whiskey Island, LA (NRDA)	LA CPRA/NOAA	8.3 million	Environmental Review
North Breton Island, LA (NRDA)	FWS	3-5 million	Planning

# Caminada Headland Restoration, Louisiana



Background Imagery:  
2006 Landsat Thematic Mapper 5 Mosaic



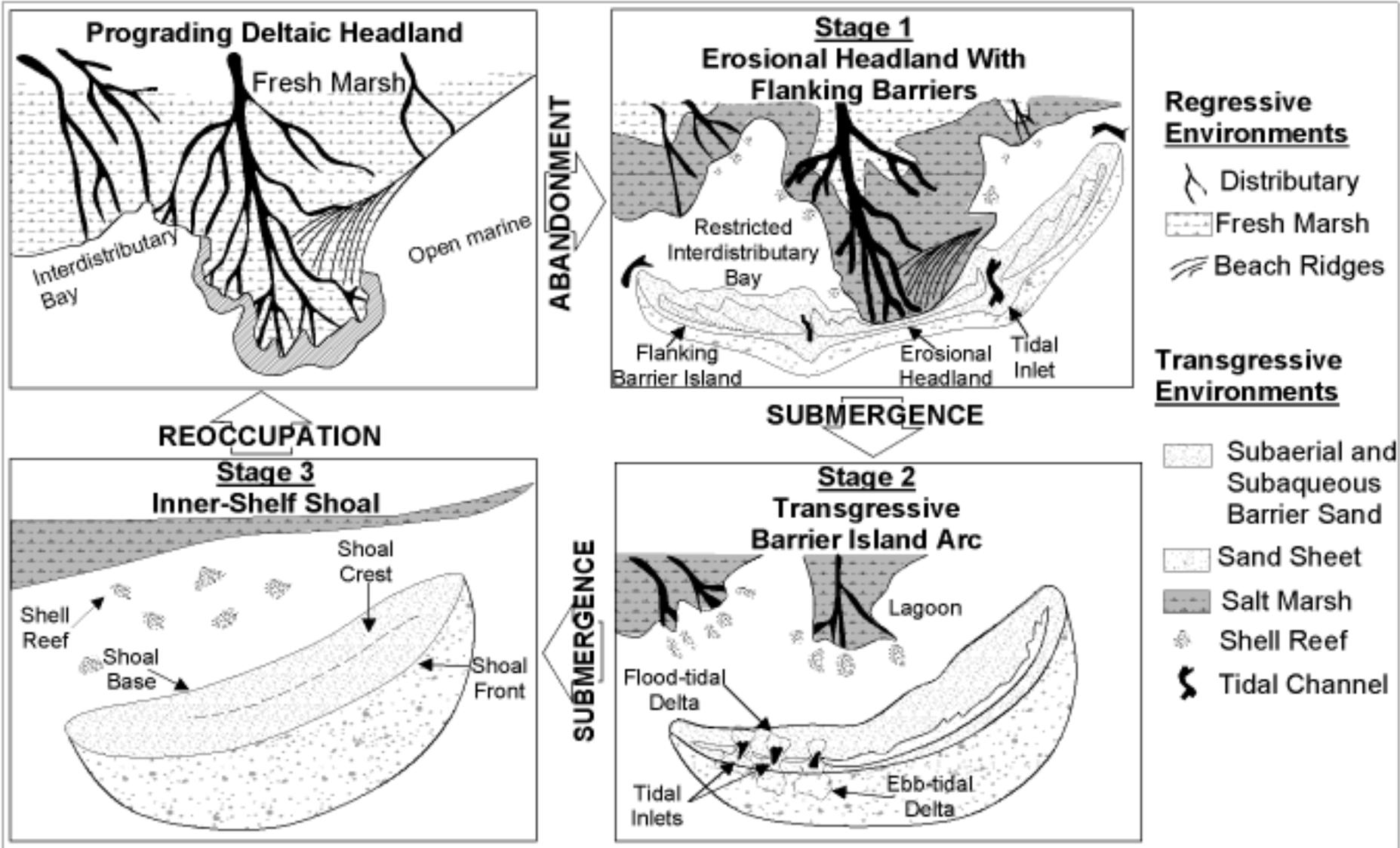


- Maringouin-Teche (7,500 – 3,800 yrs BP)
- St. Bernard (4,000 – 2,000 yrs BP)
- Lafourche (2,500 – 400 yrs BP)
- Balize (1,000 yrs BP – present)
- Atchafalaya (400 yrs BP – present)

Adapted from Fisk (1944), Kolb and van Lopik (1958), Frazier (1967), Penland et al. (1988), Tornqvist et al. (1996), Roberts (1997), and Kulp et al. (2005).



# Mississippi River Delta Plain Barrier Island – Shelf Shoal Evolutionary Model



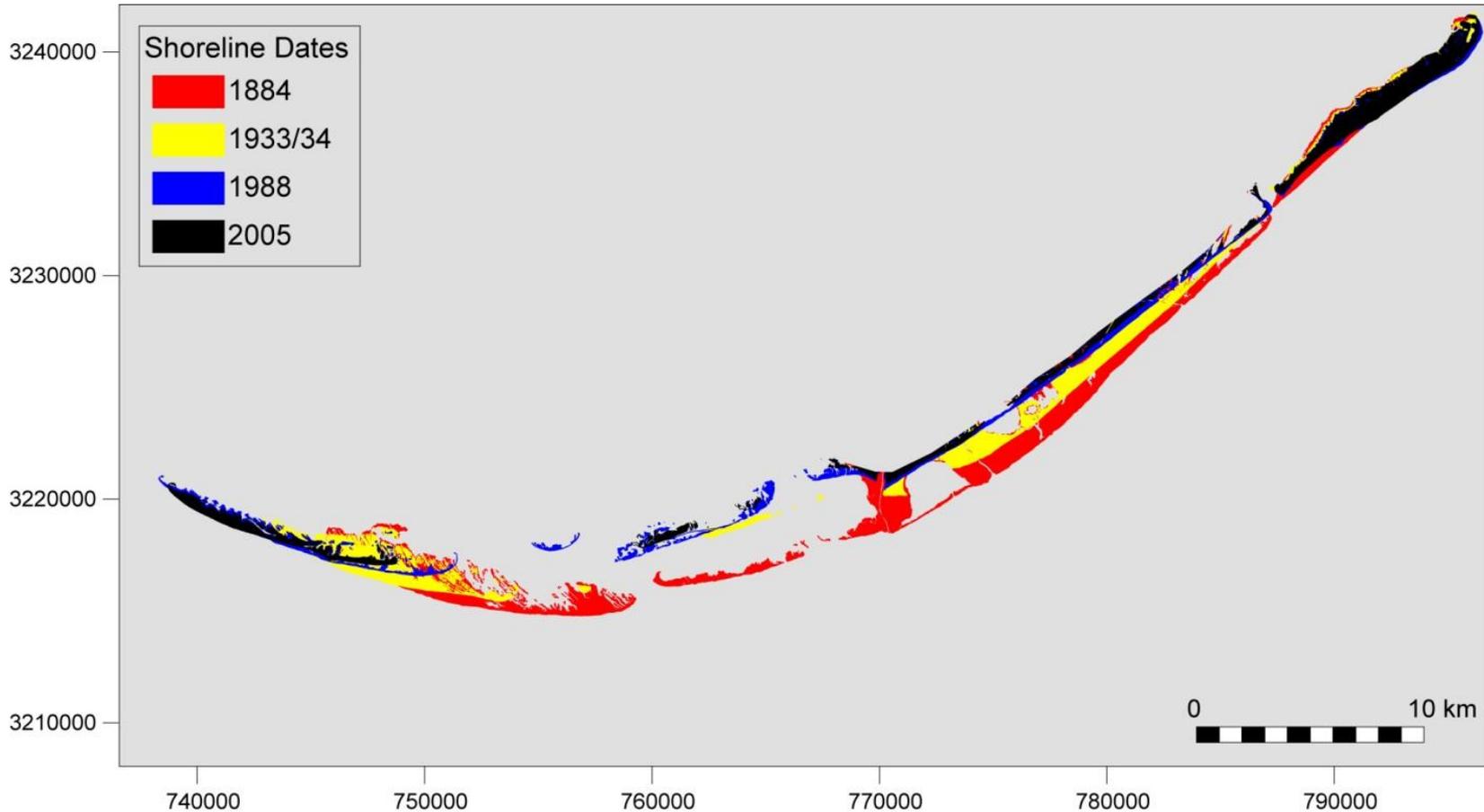
# Mississippi River Delta Plain



## Purpose

- The goal of the Project is to protect and preserve the geomorphic integrity and function of the barrier shoreline of the Caminada Headland by:
  - Protecting and sustaining unique coastal habitats and threatened and endangered species.
  - Reducing wave and tidal energy in back-barrier and interior wetland environments and maintaining estuarine salinity gradients.
  - Providing a sediment source to sustain barrier islands down-drift (east and west) of the Headland.
- Maintain and restore the integrity of the Louisiana coastline.
- Address severe erosion of Headland (historical average of 45 ft per year).
- Incidental benefits include protection of Port Fourchon and LA HWY 1.



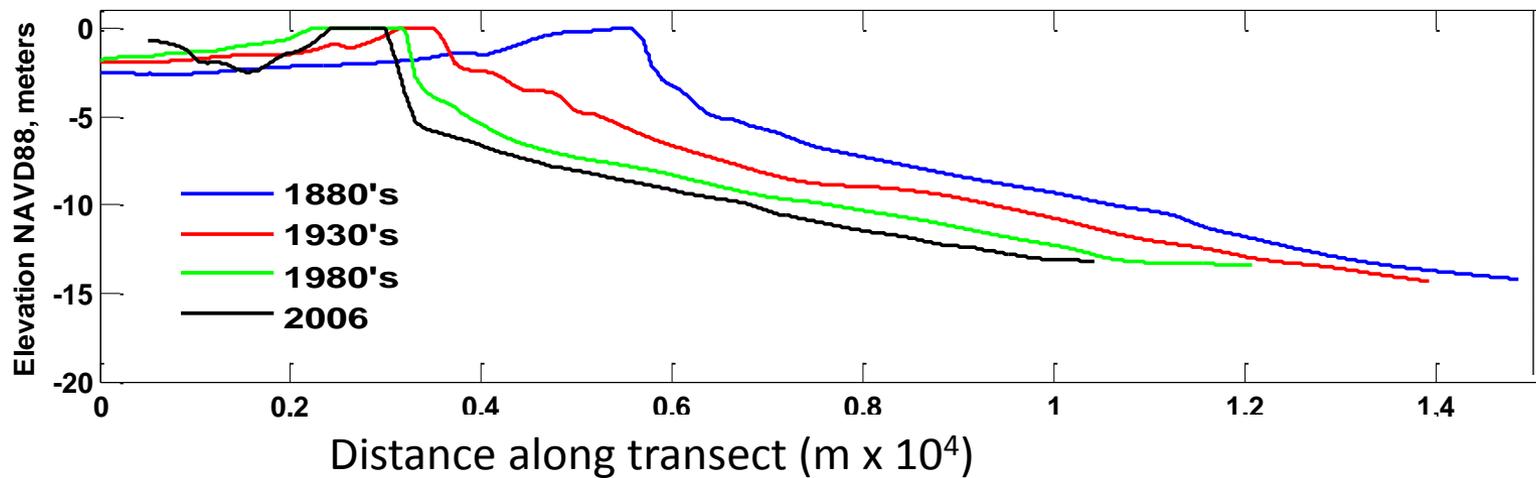
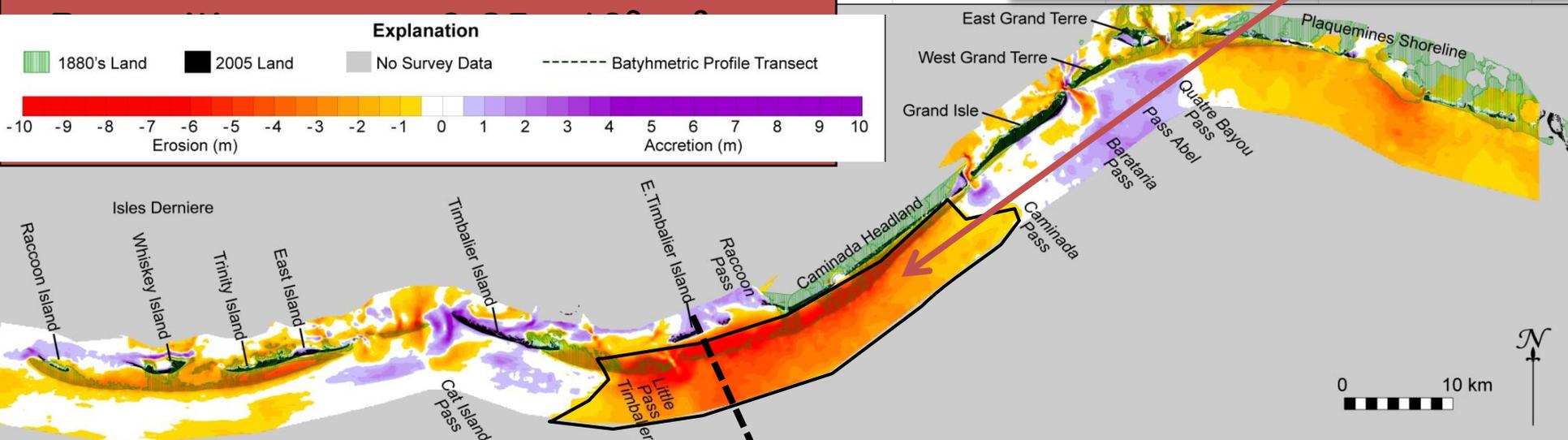
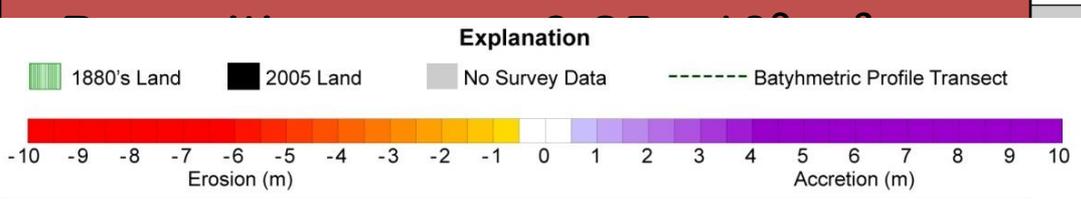


Paucity of sand and 0.9 cm/yr relative sea level rise forces 3 km/century shoreline retreat - **most rapidly eroding shoreline in North America** (historical shoreline data from Williams et al. 1992 and Martinez et al. 2009)



**Caminada Shoreface:  
-1 x 10<sup>9</sup> m<sup>3</sup>**

**Totals 1880s-2006:**



## Ship Shoal OCS Sand Resource

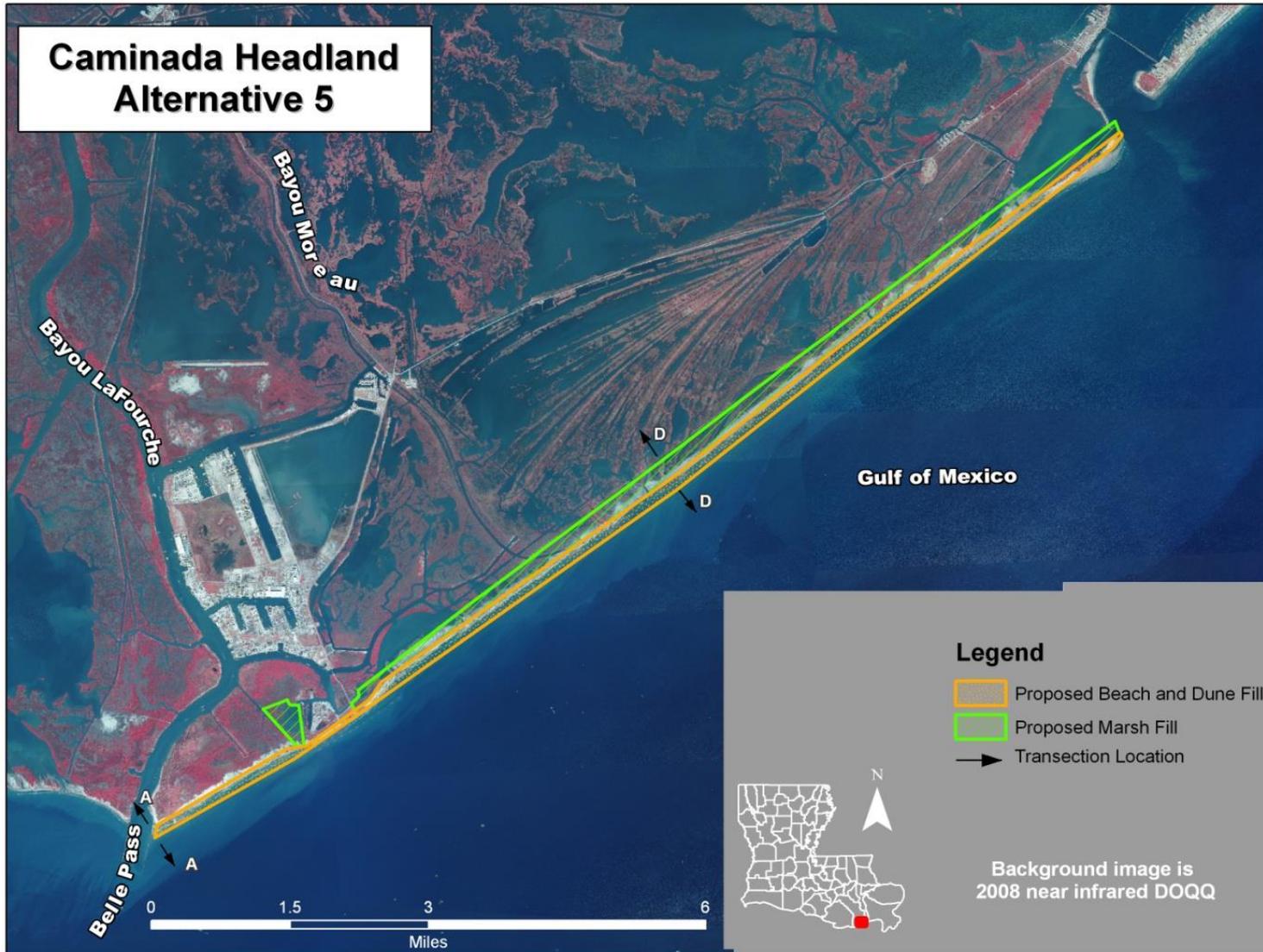
Advantages over nearshore sand:

- Higher quality (coarser grain size and less mud)
- Offshore excavation does not affect wave climate at shoreline
- Excavation occurs outside of the active coastal system, introducing new sand to supplement a deficit in the coastal sand budget

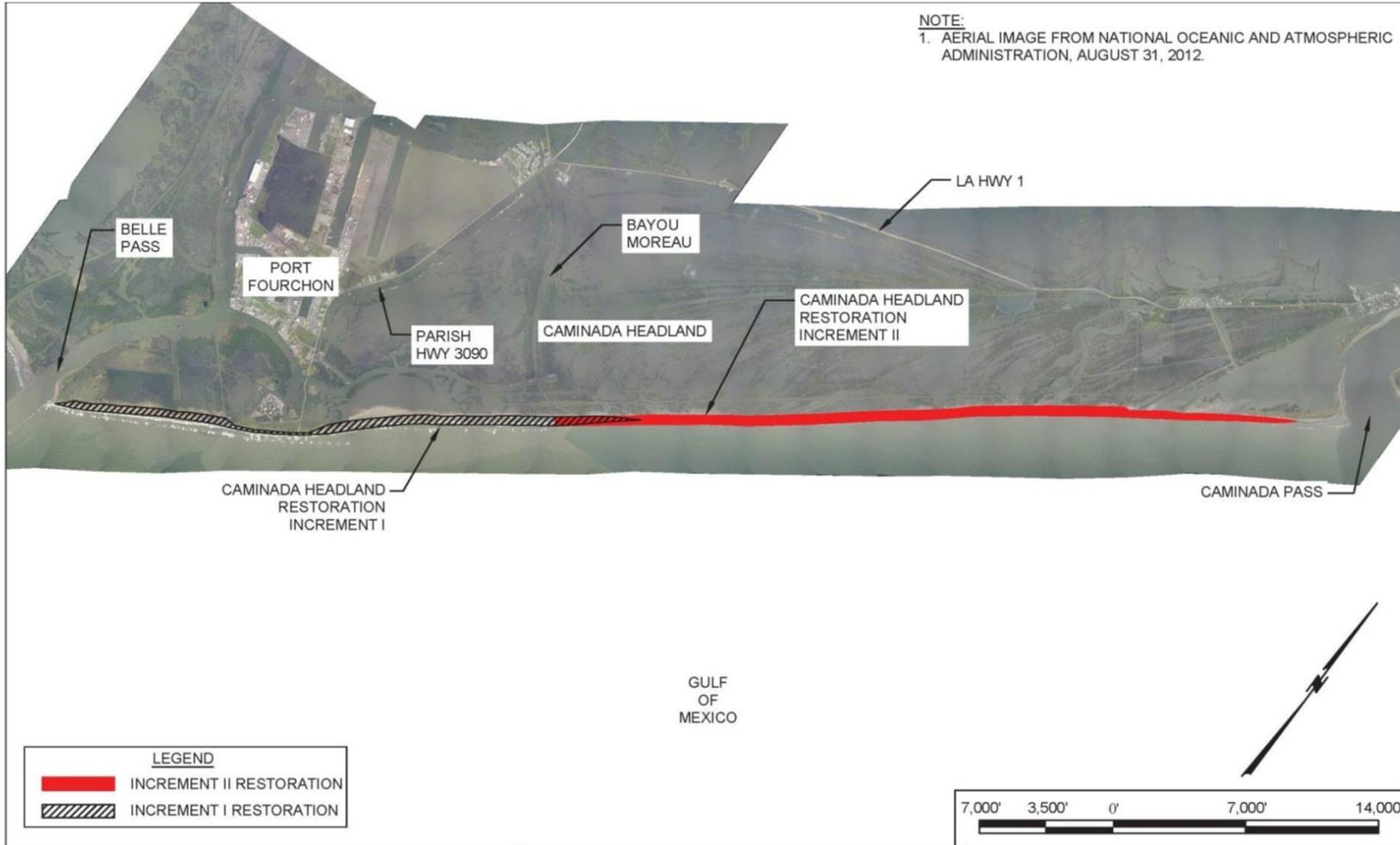
**→ Improving project long-term sustainability and geomorphic function**



## Louisiana Coastal Area (LCA) Preferred Alternative (COE – unfunded)



## CPRA Implementation: Increment 1 vs. Increment 2



## Increment 1 vs. Increment 2

	Increment I	Increment II	
Beach Elev.	+4.5	+4.5	ft NAVD88
Beach Width	65	65	ft
Dune Elev.	+7.0	+7.0	ft NAVD88
Dune Crest Width	290	290	ft
Surface Area	303	489	acres
Total Fill Volume	3,310,000	5,390,000	yds <sup>3</sup>
Total Length of Project	31,000	39,000	ft
Start of Construction	8/2013	~8/2014	
Approx. Project Cost	70 million	120 million	\$
Funding Source	CIAP/State Surplus	NFWF	

## Sand Search, Clearance Surveys, Borrow Design

Ocean Surveys, Inc. 129 Mill Rock Road East Old Saybrook, CT 06475		<b>OSI CORE LOG</b>		CORE NO. VC-4		
PROJECT 11E5008 Vibratory Core Sediment Sampling		CORE NO. VC-4		COLLECTION DATE 10/12/2011		
LOCATION Ship Shoal, Louisiana		STATION NO. VC-4		COORDINATES State Plane NAD 83, LA-South		
CLIENT Coastal Engineering Consultants		UNITS US Survey Feet		NORTHING 151610		
CORE OPERATOR Kevin Murphy		EASTING 3510615		CORE INSPECTOR Jeff Moti		
MODEL OF CORER 1500		Water depth (at time of collection) 28.5'				
CORE DIAMETER 3.5"		PROJECT DATUM NAVD88				
TOTAL PENETRATION 18.5'						
TOTAL RECOVERY 20.0'						
DEPTH BELOW SEASID (NAVD88)	ELEVATION (NAVD88)	SEDIMENT TYPE	VISUAL DESCRIPTION AND REMARKS	SAMPLE ID	SAMPLE INTERVAL	DEPTH BELOW SEASID
0	29		0.0-16.0' - Fine sand, med gray, compact. Shell fragments throughout sub section. Shell fragments ~0.1" diameter at 2.2', 3.3', 4.6', 5.9', 6.4', 12.7', 13.6', and 16.0'. Bottom contact gradual.	VC-4 (0.0-0.4)	0.0-0.4	0
1	30			VC-4 (1.8-2.2)	1.8-2.2	1
2	31			VC-4 (3.8-4.2)	3.8-4.2	2
3	32			VC-4 (5.8-6.2)	5.8-6.2	3
4	33			VC-4 (7.8-8.2)	7.8-8.2	4
5	34			VC-4 (9.8-10.2)	9.8-10.2	5
6	35			VC-4 (11.8-12.2)	11.8-12.2	6
7	36			VC-4 (13.8-14.2)	13.8-14.2	7
8	37			VC-4 (15.8-16.2)	15.8-16.2	8
9	38			VC-4 (17.8-18.2)	17.8-18.2	9
10	39			VC-4 (19.6-20.0)	19.6-20.0	10
11	40					11
12	41					12
13	42					13
14	43					14
15	44					15
16	45		16.0-19.4' - Silty fine sand, medium gray, compact. Shell fragment ~0.1" diameter at 17.0'. Bottom contact sharp.			16
17	46					17
18	47					18
19	48					19
20			19.4-20.0' - Sandy clay, dark gray, aqueous. Oyster shell at			20

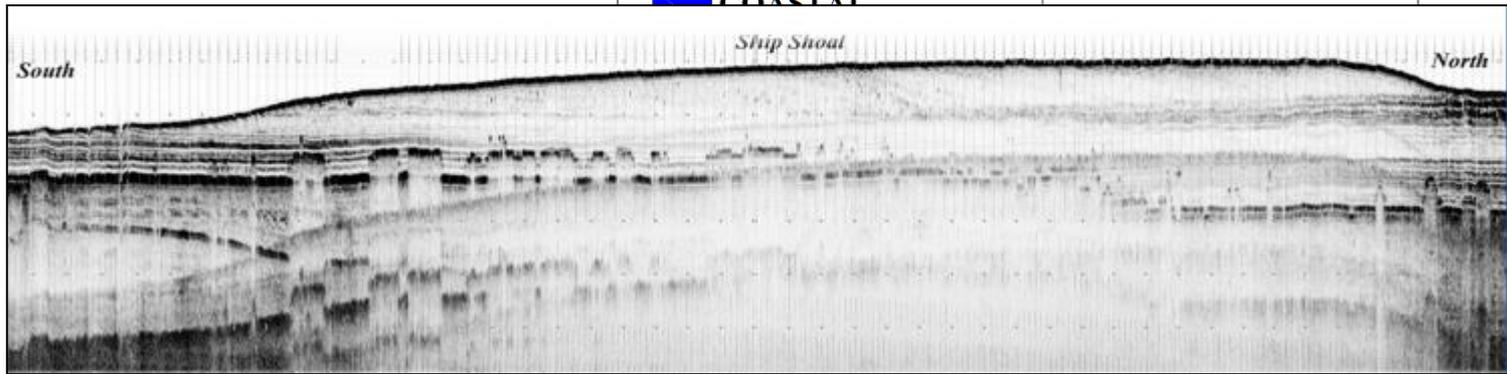
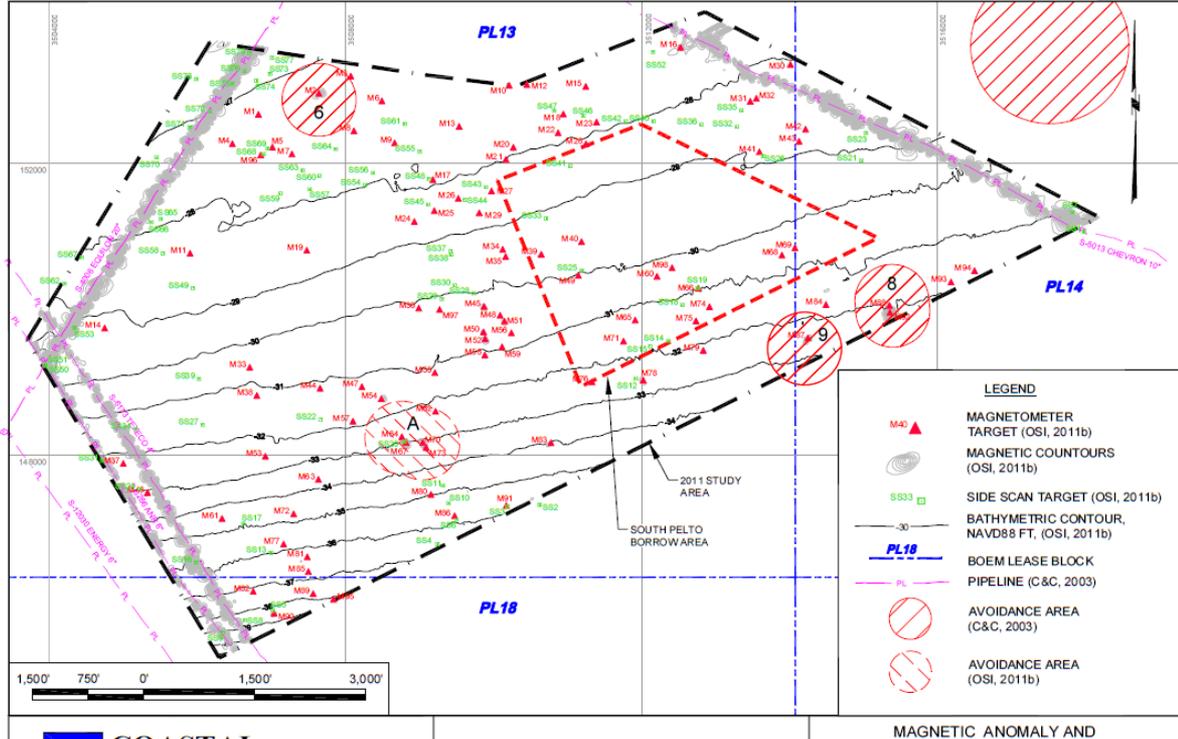


FIGURE 5



## Permits and Sand Lease

NEGOTIATED NONCOMPETITIVE LEASE  
BETWEEN  
THE BUREAU OF OCEAN ENERGY MANAGEMENT  
OF THE DEPARTMENT OF THE INTERIOR  
AND THE  
STATE OF LOUISIANA  
COASTAL PROTECTION AND RESTORATION AUTHORITY  
REGARDING THE USE OF OUTER CONTINENTAL SHELF  
SAND RESOURCES FOR CAMINADA HEADLAND SHORELINE  
RESTORATION PROJECT, LOUISIANA  
BOEM Negotiated Agreement No. G34667

Signatory Page 2 of 2

  
Jerome Zeringue  
Executive Director  
Coastal Protection and Restoration Authority  
State of Louisiana

Date: 7-31-12

  
John L. Rudi  
Regional Director  
Bureau of Ocean Energy Management  
Gulf of Mexico OCS Region

Date: 8/2/12



DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL MANAGEMENT  
P.O. BOX 44487  
BATON ROUGE, LOUISIANA 70804-4487  
(225)342-7591  
1-800-267-4019

### COASTAL USE PERMIT/CONSISTENCY DETERMINATION

**CUP No.:** P20121150  
**COE No.:** MVN 2012-02134 WPP  
**NAME:** COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA  
Attn: Brad Miller  
P.O. Box 44027  
Baton Rouge, LA 70804  
**LOCATION:** Lafourche and Jefferson Parishes, LA;  
Increment II of the Caminada Headland restoration project extends from Lat 29° 07' 36"N, Long 90° 09' 05"W (the eastern terminus of Increment I) to Lat 29° 11' 15"N, Long 90° 03' 10"W (approx. 0.5 miles southwest of Caminada Pass). The sand will be mined from Ship Shoal, an OCS borrow area located in South Pelto Area Blocks 13 and 14, approx. 28 nautical miles southwesterly from the center of the Caminada Headland projects (Increments I and II). The new Ship Shoal borrow area is centered at Lat 28° 54' 47"N, Long 90° 37' 12"W. The new Offshore No. 3 Pump-Out Area is centered at Lat 29° 08' 35"N, Long 90° 03' 43"W.  
**DESCRIPTION:** Caminada Headland Beach and Dune Restoration Project- Increment II (CPRA Project BA-45). Increment I was authorized by DNR/OCM P20111274, DNR/Consistency C20110372, USACE MVN-2011-02539-WPP, and DEQ WQC 111006-01. This proposed project increment includes the re-establishment of the eroded headland/beach through the creation of a continuous beach and dune system for approx. 38,500 linear feet of shoreline (±448 acres of beach and dune habitat) on the Caminada Headland from Bayou Moreau eastward to Caminada Pass. The dune will be omitted along the easternmost ±8,500 feet due to the presence of healthy dune habitat. Up to approx. 6,100,000 cu. yds. of sand will be mined from the South Pelto borrow area, and then transported via hopper dredge and/or scow barges to a proposed pump-out area (1,500' x 1,500'). This pump-out area, located approx. 11,000 feet offshore in the Gulf and designated as Offshore No. 3 Pump-Out Area, will allow the temporary placement of sand mined from offshore. A conveyance corridor will be established to lay an ±11,000-foot pipeline that will transport sand material from this offshore pump-out area to the headland and beach/dune fill template. Four pump-out areas denoted as Lower Belle Pass, Upper Belle Pass, Offshore West, and Offshore East, along with their respective pipeline corridors were permitted for Increment I and may be utilized for Increment II.

with the rules and regulations of the Louisiana Coastal Resources Program and Louisiana R.S. 49, Sections 41, the performance of this permit, or retention of this permit requires assessment.



DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 62027  
NEW ORLEANS, LOUISIANA 70169-0207

REPLY TO  
ATTENTION OF

MAY 10 2012

Operations Division  
Western Evaluation Section

SUBJECT: MVN-2011-02539-WPP

Coastal Protection and Restoration Authority of Louisiana  
450 Laurel Street, Suite 1200  
Chase Tower North  
Baton Rouge, Louisiana 70801

Gentlemen:

Enclosed is a permit dated this date, subject as above, authorizing work under the Department of the Army permit program.

You are again reminded that any work not in accordance with the approved plans is subject to removal regardless of the expense and the inconvenience that such removal may involve and regardless of the date when the discrepancy is discovered.

Your attention is directed to all the terms and conditions of the approval. In order to have the work approved in accordance with the issued permit, all terms and conditions of the permit and plans shown on the drawings attached thereto must be rigidly adhered to.

It is necessary that you notify the District Engineer, Attention: Western Evaluation Section, in writing, prior to commencement of work and also upon its completion. The notification must include the permittee's name, as shown on the permit, and the permit number. Please note the expiration date on the permit. Should the project not be completed by that date, you may request a permit time extension. Such requests must be received before, but no sooner than six months before, the permit expiration date and must show the work completed and the reason the project was not finished within the time period granted by the permit.

A copy of Page 1 of the permit (ENG Form I721) must be conspicuously displayed at the project site. Also, you must keep a copy of the signed permit at the project site until the work is completed.

The New Orleans District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the Customer Service Survey found on our web site at <https://per2.mvp.usace.army.mil/survey.html>

Sincerely,

  
Ronnie W. Duke  
Chief, Western Evaluation Section

BOBBY JINDAL  
GOVERNOR



State of Louisiana  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

NOV - 1 2012

GEC, Inc.  
8282 Goodwood Boulevard  
Baton Rouge, LA 70806

Attention: Donna Rogers, Agent for the Louisiana Coastal Protection & Restoration Authority

RE: Water Quality Certification (WQC 120906-01/A) 183799/CER 20120001)  
Corps of Engineers Permit (MVN-2012-2134-WPP)  
Coastal Management Permit (P20121150)  
Lafourche Parish

Dear Ms. Rogers:

The Louisiana Department of Environmental Quality (the Department) has reviewed your application to dredge waterbottoms and place spoil material for coastal dune restoration (Caminada Headland and Dune Restoration- Increment 2), in the vicinity south of Port Fourchon, Louisiana.

PEGGY M. HATCH  
SECRETARY

2012 NOV - 7 PM 3:02  
RECEIVED  
OFFICE OF COASTAL MANAGEMENT

### JOINT PUBLIC NOTICE

October 31, 2011

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
NEW ORLEANS DISTRICT  
REGULATORY FUNCTIONS  
BRANCH  
P.O. BOX 60267  
NEW ORLEANS, LA 70166

Phone (504) 862-2548  
Fax (504) 862-2574

CORPS REVIEWER:  
Johnny Duplantis

COE NUMBER:  
MVN-2011-01089

STATE OF LOUISIANA  
DEPARTMENT OF ENVIRONMENTAL  
QUALITY  
OFFICE OF ENVIRONMENTAL  
SERVICES  
P.O. BOX 4313  
BATON ROUGE, LA 70821-4313

Phone (225) 219-3225  
Fax (225) 325-8250

DEQ REVIEWER:  
Jamie Phillippe

WQC NUMBER:  
111006-01

STATE OF LOUISIANA  
DEPARTMENT OF NATURAL  
RESOURCES  
OFFICE OF COASTAL  
MANAGEMENT  
P.O. BOX 44487  
BATON ROUGE, LA 70804-4487

Phone (225)-342-3167  
Fax (225) 342-9439

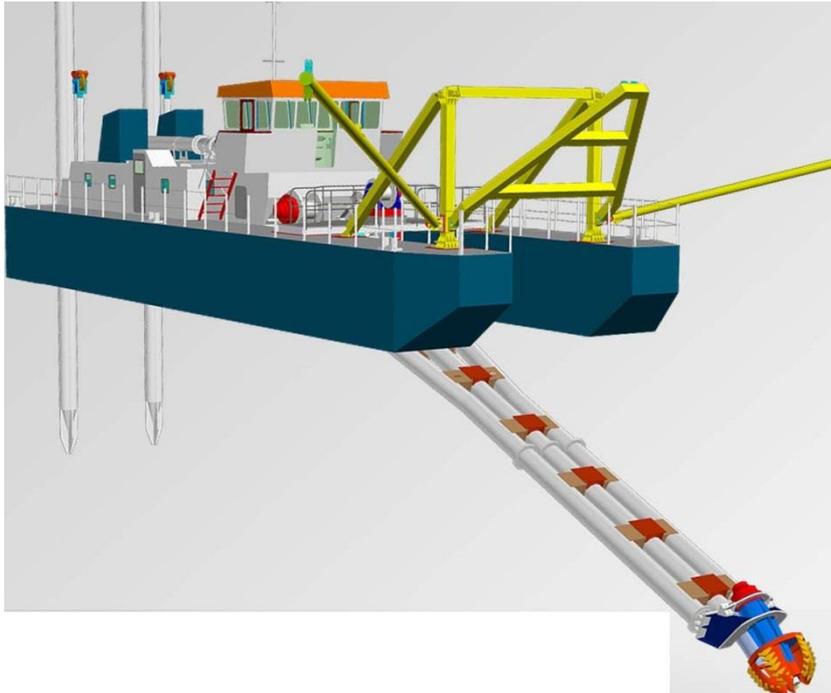
OCM REVIEWER:  
Chris Seifert

CUP NUMBER:  
P20111274



## Dredge Types

Cutter Suction Dredge (Cutterhead)



Trailing Suction Hopper Dredge (Hopper)



## Dredging and filling scow barges at Ship Shoal on OCS



Images courtesy of Louisiana CPRA



Scow barge towed 27 miles to fill area



Images courtesy of Louisiana CPRA



## Pumpout to shore at Belle Pass



Images courtesy of Louisiana CPRA

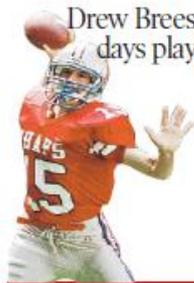




Images courtesy of Louisiana CPRA

Patrick M. Quigley  
www.gulfcoastairphoto.com  
Slidell, LA 70578





Drew Brees, other Saints recall their days playing for high school titles

sports 1C



Diners get the opportunity to blend their own eatplaylive 1D

# THE ADVOCATE

BATON ROUGE • LOUISIANA

THEADVOCATE.COM

89th year, No. 165

## beach building



Bulldozers move sand as it gets pumped onto the beach at the Caminada shoreline projects at Port Fourchon.



Advocate staff photos by CATHERINE THIBODEAU

Sand gets pumped onto the beach Wednesday at the Caminada shoreline projects in Port Fourchon. Barges are filled with sand at Ship Shoal 27 miles offshore, then towed to land where the dredged material is pumped up on the beach. The project is to restore the Caminada Headland, which stretches below Port Fourchon to the east towards Grand Isle.

### Sand from Ship Shoal used to build barrier project south of Port Fourchon

**BY AMY WOLD**  
awold@theadvocate.com

**A** long-coveted deposit of sand from a former Mississippi River delta miles off the Louisiana shoreline is being used to help rebuild part of the state's eroding coastline.

Known as Ship Shoal, this deposit of good sand is being mined for the first time to help build six miles of beach and dune along the Caminada Headland that fronts an area of Lafourche Parish just south of Port Fourchon.

Ship Shoal has long been recog-

alized as a good source of material for building barrier islands or other beach areas. The problem has been its distance from shore and the associated cost of moving the material. In addition, there has been the issue of getting federal permission to dredge material from the Outer Continental Shelf, which was addressed when the Department of Interior's Bureau of Ocean Energy and Man-

agement agreed to the dredging last year.

As for the cost, Garret Graves, the governor's executive assistant for coastal activities, said lessons learned from building sand berms after the 2010 Deepwater Horizon disaster helped make the process of transporting the material more efficient. In the 2010 berm work, sediment from the Mississippi River was put on barges and then dumped near the project site to be dredged and pumped into place.

See BEACH, pg. 5A



## Stat agency BR c scl

Evidence cart Science and T

Advocate staff report

State and federal aid day upon the Kenilworth Charter School from the Baton Rouge. But details of the a closely guarded enforcement of official reason for the visit.

More than a dozen boxes — stacked tightly and fit them like of a large, unmarked front doors. Several said the school's files as agents in the loaded into the van.

Mary Beth Romig New Orleans, conf the school, in the 76 but would not even were on the scene.

"It was not an issue Romig said.

In addition to the specter General and Sheriff's Office also

## La. insu enrollm

**BY MELINDA DESLATS**  
Melinda@theadvocate.com

**BATON ROUGE** — No dents signed up for November with the keystone, a number far short of the targeted coverage.

Problems continue month, but federal the pace of enrollment country because many were repaired with The U.S. Depart-

## Houma doctor performs new procedure on heart patient 3A



## Prep football All-district teams announced 2B

## Louisiana Style



Coming Sunday: Movie inspires a loving donation

# THE COURIER

Good Morning, Mes Amis

DECEMBER 14, 2013 | 50¢ DAILY SATURDAY HOUMA, LOUISIANA | WWW.HOUMATODAY.COM

## Prospects for budget legislation in Senate are solid

**David Esposito**  
AP Special Correspondent

**WASHINGTON** — One day after winning lopsided House approval, bipartisan legislation to ease across-the-board spending cuts and reduce economy-rattling budget brinkmanship appears likely to command the 60 votes necessary to clear the Senate, officials in both parties said Friday.

Yet unlike in the House, significantly more Senate Republicans are expected to oppose the legislation than vote for it, highlighting the different political forces at work at opposite ends of the Capitol.

Majority Leader Harry Reid, D-Nev., announced a test vote for Tuesday on the measure, which cleared the House on an overwhelming bipartisan vote of 332-94.

The Veterans of Foreign Wars joined the ranks of the bill's opponents during the day, citing a provision to reduce cost of living increases for military retirees until they reach age 62.

The result could mean "a cumulative loss in retirement income of \$80,000" for a sergeant first class who retires at age 40, the group said.

"Although Iraq is over and the war in Afghanistan is winding down, we can't allow Congress to dismantle the programs they created over the past 12 years," said William A. Thien, the VFW's national commander.

A short while later, Republican Sens. Kelly Ayotte of New Hampshire, Roger Wicker of Mississippi and Lindsey Graham of South Carolina said they would oppose the measure unless the provision were changed.

They said a 42-year-old sergeant first class retiring after 20 years would lose about \$72,000 in income.

Overall, the legislation



Bulldozers build land Wednesday on Fourchon Beach. The project is part of the Caminada Headland Barrier Island Project.

## Saving the Coast

### Workers restore barrier island beaches

**Xerxes Wilson**  
Staff Writer

The state is turning back the geological clock on the beach in south Lafourche Parish.

Building land is a round-the-clock effort on Fourchon Beach as work continues on the Caminada Headland project.

State officials say the project will protect withering wetlands and the beach's neighboring Port Fourchon. It's also another learning opportunity for those responsible for restoring Louisiana's barrier islands, a \$1.7 billion component of the state's plan to save the coast.

But building sandy beaches where waves are crashing is no small task. The sand being used for the beach at Fourchon starts nearly 26 miles away, underwater at Ship Shoal off the coast of Terrebonne Parish. There, a cutter head dredge works around the clock pulling sediment from the Gulf floor.

That sediment is then pumped into a barge that carries about 3,500 cubic yards of sand from the shoal to Belle Pass just south of Fourchon.

At Belle Pass, it's sucked into a pipe that uses a 7,200-horsepower pump to send the sediment miles

"Its like turning back the clock and putting material back into a system where it will be naturally redistributed again over the years."

Mike Miner, coastal geologist with the federal Bureau of Ocean Energy Management

down the beach to the work area where it is spewed out, molded and shaped 24 hours a day by a team of bulldozers.

In all, the project will create about 303 acres of beach and dune along a 6-mile stretch. More than 3.3 million cubic yards of material will raise the beach to an elevation of 4.5 feet and extend it outward, said Brad Miller, project manager for the state's Coastal Protection and Restoration Authority.

Ship Shoal itself was a barrier island about 8,000 years ago.

The state's barrier islands are the products of the Mississippi River depositing sediment across the shoreline for thousands of years. Today, with the river constrained to its levees, the barrier islands are left to the natural forces of erosion.

Without replenishing, they eventually end up submerged like Ship Shoal.

"Its like turning back the clock and putting material back into a system where it will be naturally redistributed again over the years," said Mike Miner, coastal geologist with the federal Bureau of Ocean Energy Management.

It's a useful transformation as well because the island provides a barrier for salt water intruding further into the fragile estuary behind it, said Garret Graves, Coastal Protection and Restoration Authority chairman.

"This also provides protection for Port Fourchon, which is a vital part of the economy," Graves said.

But it comes at a \$70 million cost to the state.

Beach growth made through the

## Insurance fix in 2013 unlikely

The legislation would have delayed reforms tied to the flood insurance program.

**Xerxes Wilson**  
Staff Writer

It's unlikely Congress will take action this year to delay flood insurance reforms brought about by the Biggert-Waters Act of 2012 after two attempts to bring legislation to a vote failed this week.

U.S. Rep. Bill Cassidy pushed a bill in the House of Representatives, but his office said Friday it will not come to a vote before Christmas as previously hoped.

"It's deeply disappointing that the Flood Insurance Relief and Transparency Act was not brought to the floor. The bill would have brought relief to millions of people across the country, including 400,000 people in Louisiana. This remains one of my top priorities and I will continue to work with both sides of the aisle to make sure we help those impacted," the Baton Rouge Republican said Friday.

Another effort in the Senate to bring legislation to a vote also fell short last week.

Sen. Mary Landrieu, D-La., tried to bring the Homeowner Flood Insurance Affordability Act to a vote in the Senate this week through a method called unanimous consent, which requires no opposition.

But opposition came from Kansas Republican Sen. Pat Roberts, who objected on behalf of the ranking member of the Senate's banking committee, Sen. Mike Crapo, R-Idaho.

"This bill has not been through the com-

See FLOOD, 6A

## TEDA budget commits to phaseout

**Xerxes Wilson**  
Staff Writer

The Terrebonne Parish Economic Development Authority will ponder ways to wind down services after committing to passing a streamlined budget to end its operations for the foreseeable future.

The commitment came at a special board meeting on Friday.

At the meeting, Terrebonne Parish President Michel Claudet addressed the organization's board for the first time since he proposed stripping the organization of its primary source of revenue, its \$18.2 million take of parish

See FOURCHON, 2A

## States have changed gun laws

Curlew Island 1996



Curlew Island Shoal 2007

