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

# of Years of OCS Sand leasing: 20
Research Projects: 151
OCS Borrow Areas Used: 22
Million Yd$^3$ of OCS Sand Conveyed: 83
Miles of Coastline Constructed: 237
Coastal Projects Completed: 42

Pelican Island, Louisiana before and after
<table>
<thead>
<tr>
<th>Project</th>
<th>Lead Agency</th>
<th>Sand Volume (yd^3)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raccoon Island, LA</td>
<td>NRCS</td>
<td>1.2 million</td>
<td>Complete 3/13</td>
</tr>
<tr>
<td>Pelican Island, LA</td>
<td>NOAA-NMFS</td>
<td>5.5 million</td>
<td>Complete 2/13</td>
</tr>
<tr>
<td>Cameron Parish Shoreline, LA</td>
<td>LA CPRA</td>
<td>5 million</td>
<td>Complete 3/14</td>
</tr>
<tr>
<td>Caminada Headland Increment 1, LA (CIAP)</td>
<td>LA CPRA</td>
<td>5.2 million</td>
<td>Construction began 8/13</td>
</tr>
<tr>
<td>Caminada Headland Increment 2, LA (NFWF)</td>
<td>LA CPRA</td>
<td>6.2 million</td>
<td>BOEM Lease issued 3/14</td>
</tr>
<tr>
<td>MsCIP Gulf Islands National Seashore, MS</td>
<td>USACE</td>
<td>5-11 million</td>
<td>Environmental Review</td>
</tr>
<tr>
<td>Whiskey Island, LA (NRDA)</td>
<td>LA CPRA/NOAA</td>
<td>8.3 million</td>
<td>Environmental Review</td>
</tr>
<tr>
<td>North Breton Island, LA (NRDA)</td>
<td>FWS</td>
<td>3-5 million</td>
<td>Planning</td>
</tr>
</tbody>
</table>
Caminada Headland Restoration, Louisiana
• 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).
Modified from Penland et al. (1988)
Mississippi River Delta Plain

Caminada Headland

Chandeleur Islands (Breton NWR)

25 km
Caminada Headland Restoration, Louisiana

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)
Totals 1880s-2006:
Deposition: $0.25 \times 10^9 \text{ m}^3$
Erosion: $-1.83 \times 10^9 \text{ m}^3$
Net volume change: $-1.58 \times 10^9 \text{ m}^3$

Caminada Shoreface: $-1 \times 10^9 \text{ m}^3$
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
Caminada Headland Restoration, Louisiana

Louisiana Coastal Area (LCA) Preferred Alternative (COE – unfunded)
Caminada Headland Restoration, Louisiana

CPRA Implementation: Increment 1 vs. Increment 2

NOTE:

LEGEND
- RED: INCREMENT II RESTORATION
- DASHED: INCREMENT I RESTORATION

GULF OF MEXICO
### Caminada Headland Restoration, Louisiana

**Increment 1 vs. Increment 2**

<table>
<thead>
<tr>
<th></th>
<th>Increment I</th>
<th>Increment II</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beach Elev.</td>
<td>+4.5</td>
<td>+4.5</td>
<td>ft NAVD88</td>
</tr>
<tr>
<td>Beach Width</td>
<td>65</td>
<td>65</td>
<td>ft</td>
</tr>
<tr>
<td>Dune Elev.</td>
<td>+7.0</td>
<td>+7.0</td>
<td>ft NAVD88</td>
</tr>
<tr>
<td>Dune Crest Width</td>
<td>290</td>
<td>290</td>
<td>ft</td>
</tr>
<tr>
<td>Surface Area</td>
<td>303</td>
<td>489</td>
<td>acres</td>
</tr>
<tr>
<td>Total Fill Volume</td>
<td>3,310,000</td>
<td>5,390,000</td>
<td>yds³</td>
</tr>
<tr>
<td>Total Length of Project</td>
<td>31,000</td>
<td>39,000</td>
<td>ft</td>
</tr>
<tr>
<td>Start of Construction</td>
<td>8/2013</td>
<td>~8/2014</td>
<td></td>
</tr>
<tr>
<td>Approx. Project Cost</td>
<td>70 million</td>
<td>120 million</td>
<td>$</td>
</tr>
<tr>
<td>Funding Source</td>
<td>CIAP/State Surplus</td>
<td>NFWF</td>
<td></td>
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Caminada Headland Restoration, Louisiana

Environmental Review and Consultations

Louisiana Coastal Area
Barataria Basin Barrier Shoreline Restoration Project
Jefferson, Lafourche, and Plaquemines Parishes, Louisiana

04EL1000-2012-F-0594
Biological Opinion
December 21, 2011

Prepared by:
U.S. Fish and Wildlife Service
646 Cajundome Boulevard, Suite 400
Lafayette, LA

Endangered Species Act – Section 7 Consultation
Biological Opinion

Action Agency: Minerals Management Service
Activity: Hopper and Hydraulic Cutterhead Dredging Associated with Sand Mining for Coastal Restoration Projects Along the Coast of Louisiana Using Sand from Ship Shoal in the Gulf of Mexico Central Planning Area, South Pelo Blocks 12, 13, and 19, and Ship Shoal Block 88.
Consultation Number F/SER/2003/01247

Consulting Agency: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, Protected Resources Division, St. Petersburg, Florida

Approved by: Roy E. Crabtree, Ph.D., Regional Administrator

June 2012

FINAL ENVIRONMENTAL ASSESSMENT
FOR THE ISSUANCE OF A NON-COMPETITIVE NEGOTIATED AGREEMENT FOR THE USE OF OUTER CONTINENTAL SHELF SANDS FOR CAMINADA HEADLAND BEACH AND DUNE RESTORATION (BA-45)

LAFOURCHE PARISH, LOUISIANA

PREPARED FOR: UNITED STATES DEPARTMENT OF INTERIOR BUREAU OF OCEAN ENERGY MANAGEMENT

ON BEHALF OF:

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

Prepared by
GEC
Baton Rouge, Louisiana
Permits and Sand Lease

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT
P.O. BOX 4487
BATON ROUGE, LOUISIANA 70824-4487
(225) 257-8189

COASTAL USE PERMIT/CONSISTENCY DETERMINATION

CUP No.: F20121150
CODE No.: MVN 2012-02134 WPP
NAME: COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA
Attn: Brad Miller
P.O. Box 44017
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' 12" N, Long 90° 03' 10" W (approx. 0.5 miles south of Caminada Pass). The sand will be mined from Ship Shoal, an OCS borrow area located in South Pto Area Blocks 13 and 14, approx. 28 nautical miles southeast from the center of the Caminada Headland projects (Increments I and II). The new Ship Shoal borrow area is centered at Lat 28° 58' 47" N, Long 90° 53' 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 II was authorized by DE/BOEM P2011-1274, DNB/Consistency COL-10572, USACE MVN-2011-02596-WPP, and DEQ-WQC 111006-01. This proposed project increment includes the re-establishment of the coastal headland/dune system through the creation of a continuous beach and dune system for approx. 3.5 miles linear feet of shoreline (448 acres of beach and dune habitat) on the Caminada Headland from Bayou Meraux eastward to Caminada Pass. The dune will be eroded along the easement 48.5 feet due to the presence of healthy dune habitat. Up to approx. 5,190,000 cu. yds. of sand will be mined from the South Pto borrow area, and then transported via barge to the Caminada Headland and delivered to the project area via a proposed pump-out area (1,560 x 1,300). 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 the borrow area. A conveyance corridor will be extended to lay an 11,000-foot pipeline that will transport sand material from this offshore pump-out area to the Dune Baselines fill template. Four pump-out areas designated as Lower Raffine Pass, Upper Raffine Pass, Offshore West, and Offshore East, along with their respective pipeline corridors were permitted for Increment I and may be utilized for Increment II.

Gentlemen:
Enclosed is a permit dated this date, subject as above, authorizing work under the Department of the Army 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. No regard shall be paid to the date when it 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 permit, all terms and conditions of the permit and plans shows 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 notice 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 be completed by that date, you may request a permit 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.

Sincerely,

Teddy W. Davis
Chief, Western Evaluation Section

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 website at http://www.usace.army.mil/centers/cvb.html.
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
Caminada Headland Restoration, Louisiana

Pumpout to shore at Belle Pass

Images courtesy of Louisiana CPRA
Pumpout to shore at Belle Pass Caminada Headland Restoration, Louisiana

Images courtesy of Louisiana CPRA
Pumpout to shore at Belle Pass Caminada Headland Restoration, Louisiana

Images courtesy of Louisiana CPRA
beach building

Savings the Coast
Workers restore barrier island beaches

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


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


TEDA budget commits to phaseout

Yarows Wills

The Terrebonne Parish Coastal Economic Development Authority will consider to wind down services after continuing to operate the soon-to-be-floated budget to end its operations for the foreseeable future.

The committee came at a special board meeting on Thursday, and Terrebonne Parish Mayor-elect Mike Bert Bossard addressed the organization’s future.

States have changed gun laws

Tina Guidroz

The Senate has approved a measure to allow people to carry concealed weapons in more areas, including public buildings and universities, except in the immediate vicinity of courthouses and other law enforcement buildings.

The bill, which was approved by a 31-6 vote, was sponsored by Sen. John Kennedy, R-La., and Rep. Rep. John Bel Edwards, D-La., and has been referred to the Senate Judiciary Committee.

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