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# GOMR Marine Archaeology Profiles – FY 2013

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**PO = Physical Oceanography
PS = Protected Species
FE = Fate & Effect
SE = Social & Economic
BIO = Biology
OT = Other

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# Analyzing Impacts to Cultural Resources as a Result of Oil and Gas Activities in Deepwater

## BSEE Information Need:

- Through NHPA, agencies must consider effects of permitted actions on significant historic properties
- Past permitted activities have caused impacts to shipwrecks: anchor cable slicing through hull, anchors/anchor chain snagged site, pipeline laid across hull
- Study will provide information on long-term degradation and/or stabilization of sites with known industry impacts
- Provide BSEE with info about appropriate mitigation measures for future discovered archaeological sites in vicinity of proposed industry activities
- Provide baseline data regarding long-term remediation when these impacts occur

## Date Information is Required:

As soon as possible

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# Analyzing Impacts to Cultural Resources as a Result of Oil and Gas Activities in Deepwater

## Background:

### A) Relationship with Previous Work/Efforts

- A few impacted sites have been investigated in the past but many have not been reassessed since the original impact assessment, limited remediation efforts were made in the past to address those impacts

- This study will seek to understand the level of impact and continued degradation or stabilization of selected sites

- Data will inform BSEE about improving and developing appropriate mitigation measures

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# Analyzing Impacts to Cultural Resources as a Result of Oil and Gas Activities in Deepwater

## Study's Objectives:

- Identify and examine long term impacts from permitted industry activities

- Understand how to better mitigate and reduce/eliminate impacts to sites by providing baseline information on appropriate remediation measures, stronger mitigations to prevent impacts, and develop tools to improve how BSEE conducts impact assessments

- Assessment of current mitigation measures, recommended improvements, establishment of series of baseline protocols for conducting impact assessments, determination of long-term degradation/stabilization since initial impacts, assessment of nearby sediments to understand if sediment impacts exacerbate site degradation

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# Analyzing Impacts to Cultural Resources as a Result of Oil and Gas Activities in Deepwater

## Study's Methods:

- Investigate up to 10 shipwreck sites in depths ranging from 500 to 10,000 ft. that have known impacts from industry activities
- Site evaluations: positively identify and assess size, distribution, and characteristics of the shipwreck remains and any associated debris fields
- Compare new and previously collected ROV/AUV site data
- Conduct visual surveys, mapping, and potential test excavations to determine extent of impact, age, cultural affiliation, and function as much as possible
- Extensive photo/video documentation
- Limited artifact collection, conservation, and curation if necessary
- Other additional analyses: wood, organic, metal samples, sediment sampling and coring
- Additional historic research
- Archaeological assessment of each site, National Register eligibility

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# Analyzing Impacts to Cultural Resources as a Result of Oil and Gas Activities in Deepwater

## Addition *Pertinent* Information

Public outreach component – posters, booklets, etc. detailing the project, impacts to historic resources, discoveries made that showcase the Gulf's rich maritime heritage

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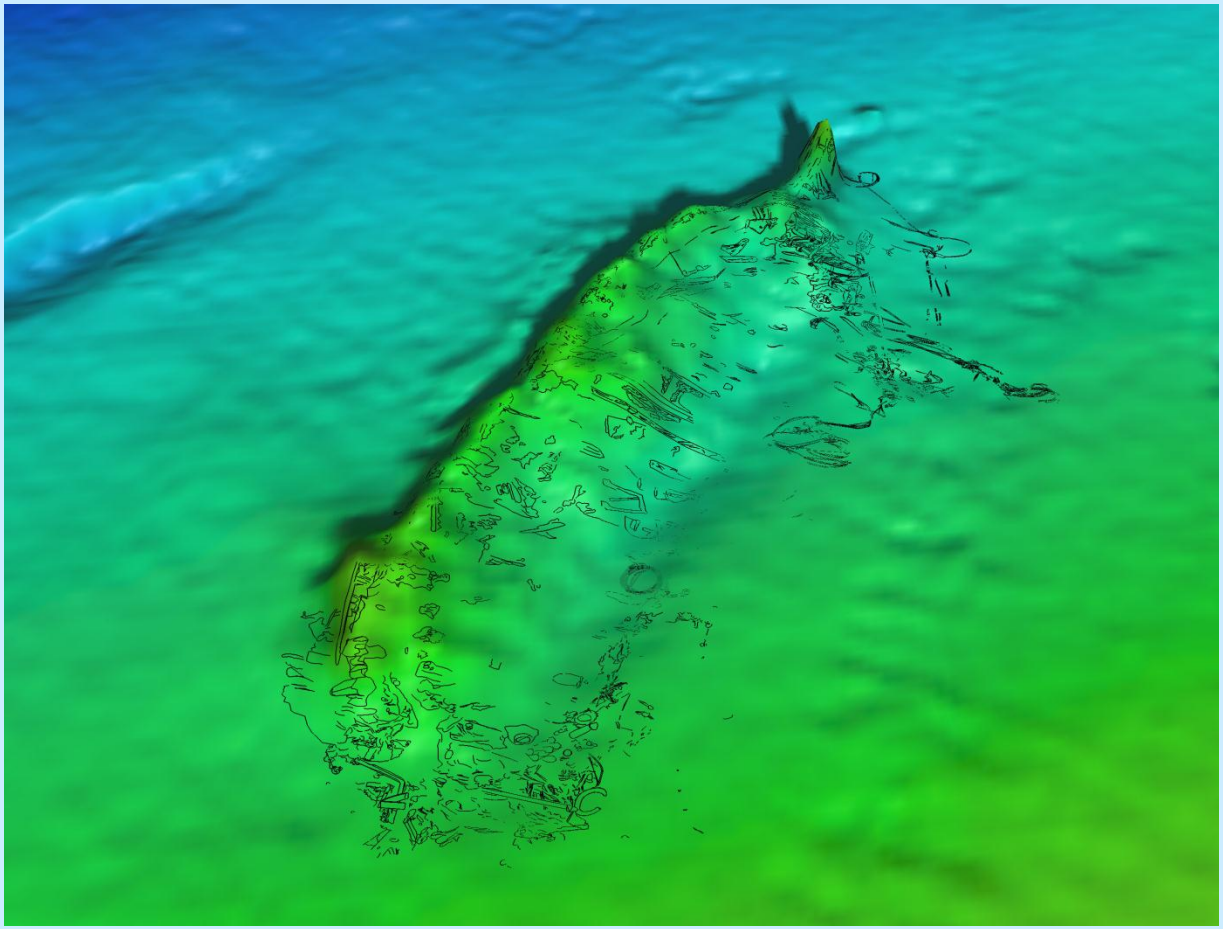
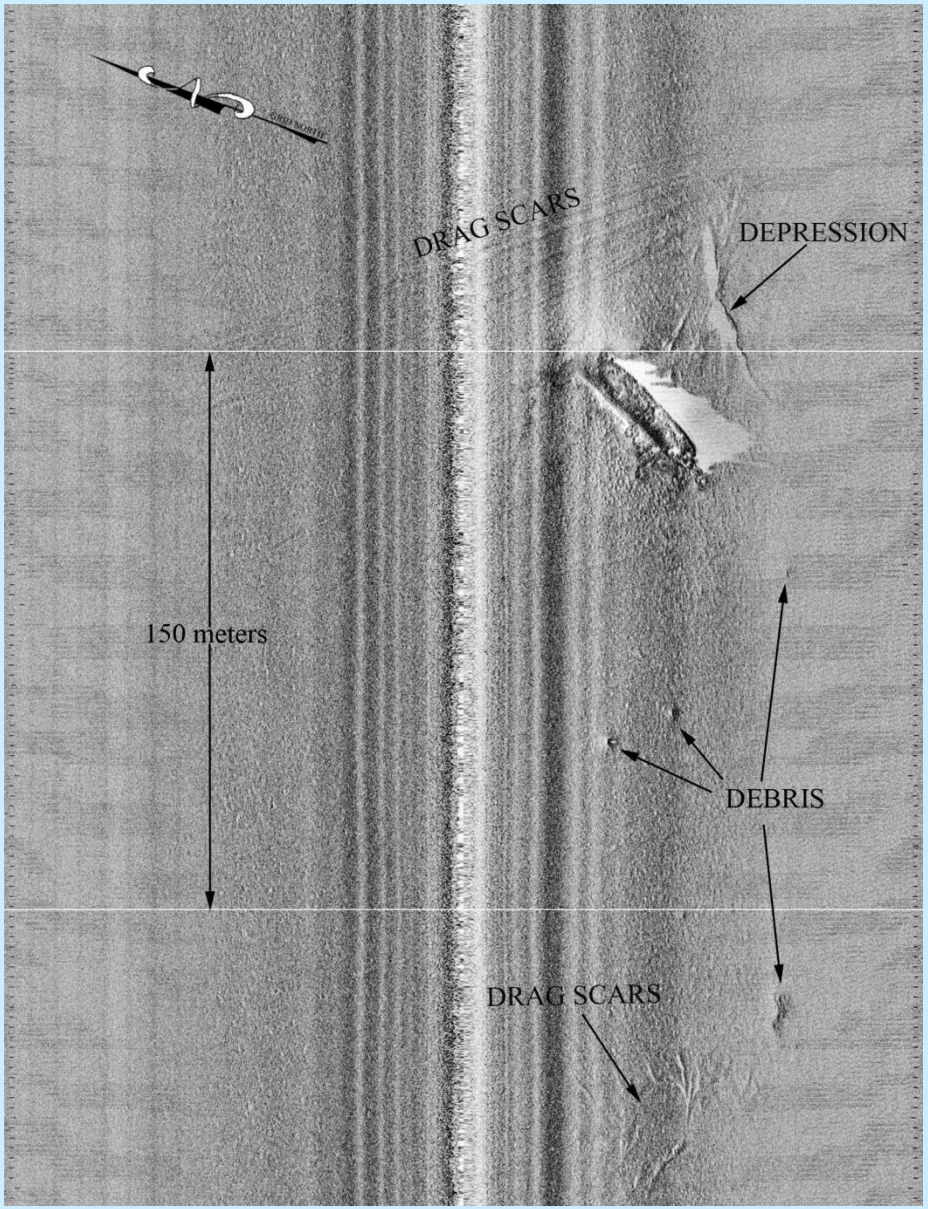
# Viosca Knoll wreck - Late 19th century

Late 19th century sailing vessel (based on artifact analysis from 2009 field investigation)
Copper sheathed wooden hull
Discovered during deep-tow survey in 2003 – no previous archaeological assessment conducted or required before installation of the platform
AUV survey in 2004
ROV investigation in 2006 as part of MMS study (MMS 2008-018 link to report)
Water depth = 2000 ft

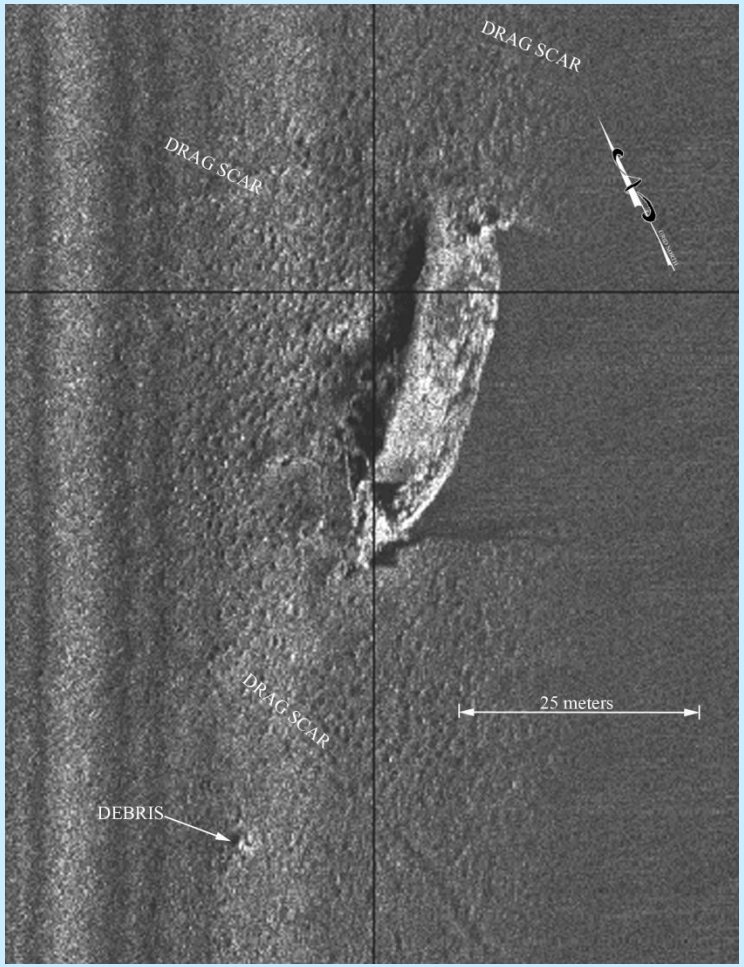


Site map draped over 3-D Multibeam data – vessel is laying on its starboard side

# AUV Side-Scan Sonar Imagery – Viosca Knoll wreck




Anchor chain drag scars observable in sonar data




**(Courtesy of C & C Technologies, Inc.).**

Hull damage – anchor chain sliced through the wooden hull on the port side

Mica Wreck in the Mississippi Canyon area

**What:**

- Unidentified historic shipwreck with copper sheathing over wooden hull
- Likely dates to 19th century
- Shipwreck not originally resolved in pipeline pre-lay survey of the proposed route (the vessel laid directly along the proposed route and in the ‘blind zone’ below the side-scan sonar towfish)
- Shipwreck discovered during post-lay ROV video survey of pipeline route
- Pipeline laid across the shipwreck – significant damage, collapsed port and starboard hull roughly amidships
- As a result of impacts to this site, archaeological survey requirements for pipelines were modified to require a 50-meter offset survey line to ensure coverage of the entire pipeline route

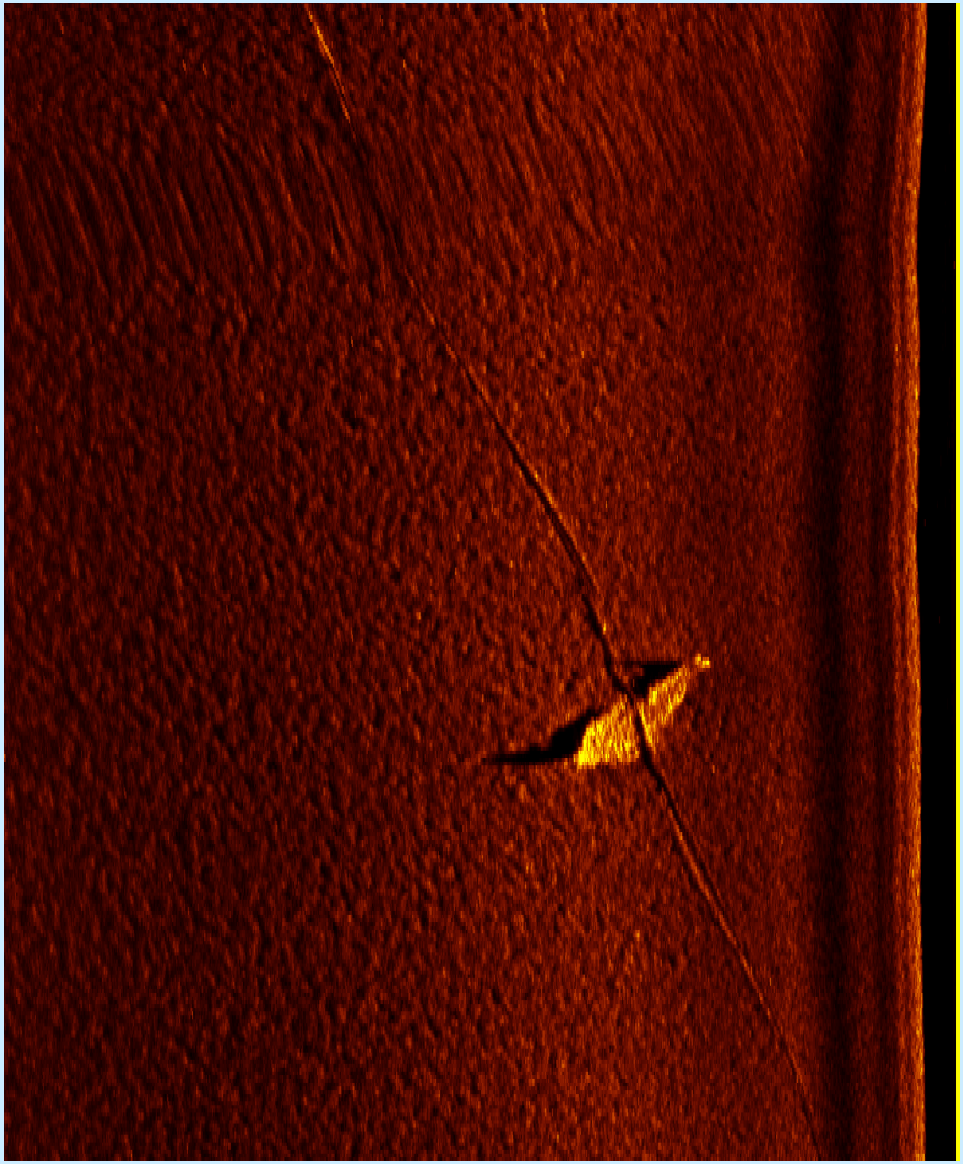
**When:**

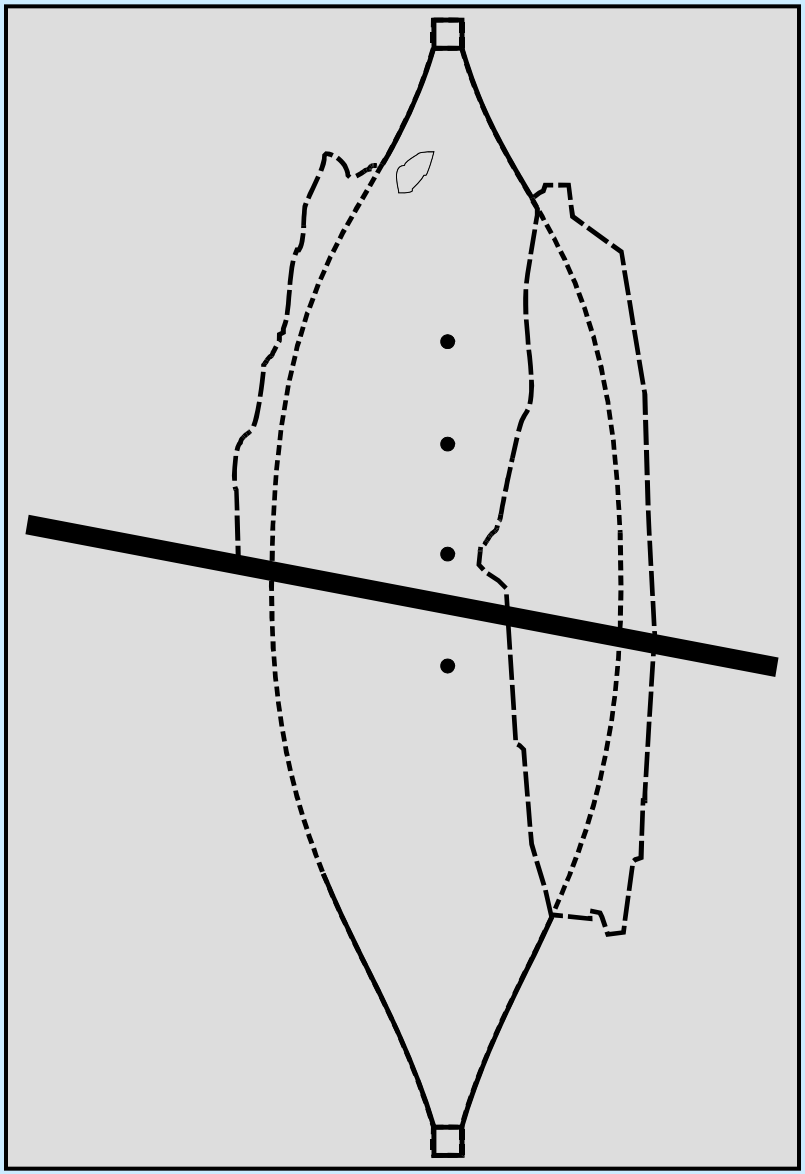
- Reported to BOEM in 2001

**Where:**

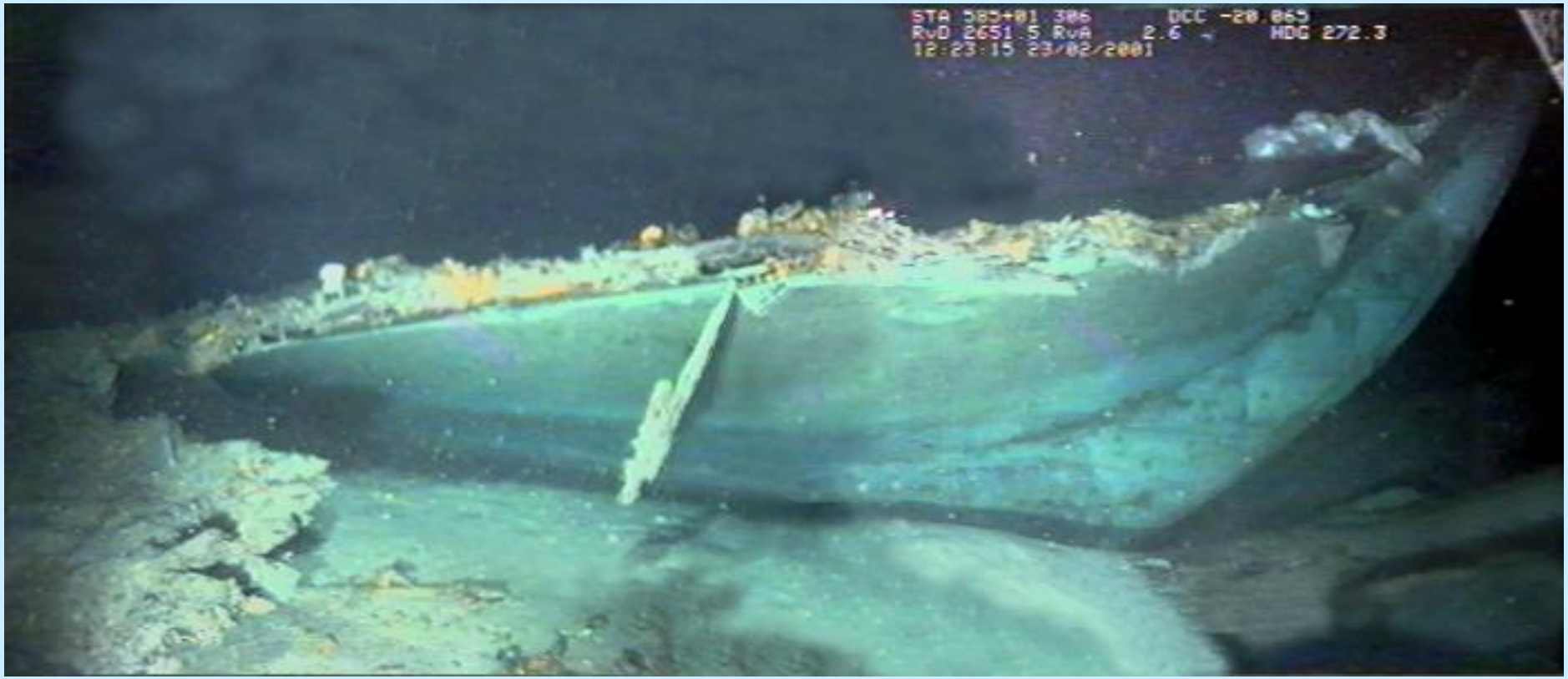
- Water Depth:  2,650 feet

# Mica wreck





Mica wreck bow – copper sheathing visible



# Mardi Gras wreck in Mississippi Canyon area

**What:**

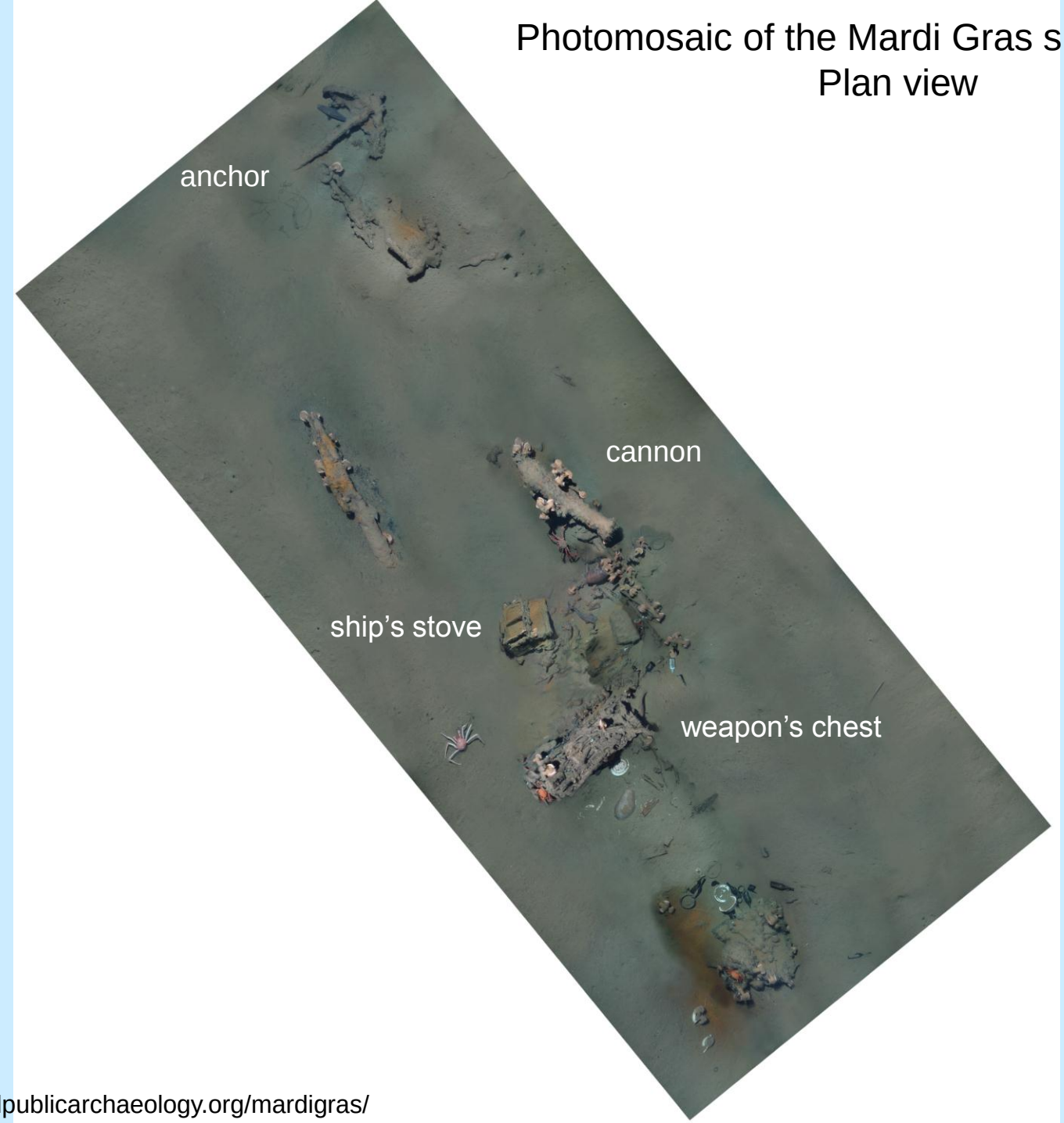
- Unidentified wooden shipwreck with substantial artifact assemblage

**When:**

- A 2001 AUV survey for a pipeline installation resolved two nebulous side-scan sonar targets. Targets both assigned avoidance mitigation for the pipeline permit approval due to BOEM's analysis of the targets as potential archaeological resources
- 2002 pre-lay ROV video survey of the pipeline route recorded anchors, cannon, bottles, and ceramics along the pipeline route which confirmed the targets represented a historic shipwreck site. Operator did not notify the agency of the shipwreck discovery as required.
- BOEM learned of this discovery through a third party in 2004 after the pipeline was laid through the site.
- Artifact analysis and archaeological investigation in 2007 (funded by the operator; the result of a BOEM-issued Incident of Non-Compliance) indicate that the ship dated between 1808 and 1820 and could possibly be a privateer or slaver

**Where**: water depth = 4300 ft

# Photomosaic of the Mardi Gras shipwreck site
## Plan view




http://www.flpublicarchaeology.org/mardigras/

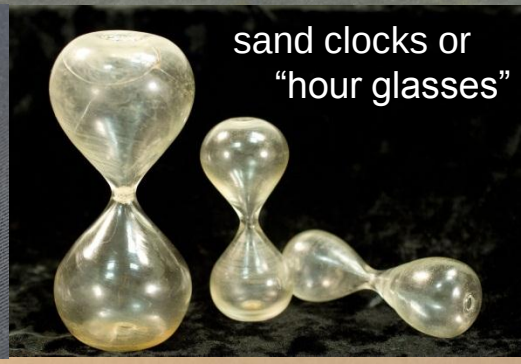
ceramics

telescope

glass bottles

coin - 1808

dividers



sand clocks or
“hour glasses”

ship’s stove

6-pounder cast iron cannon

spoons

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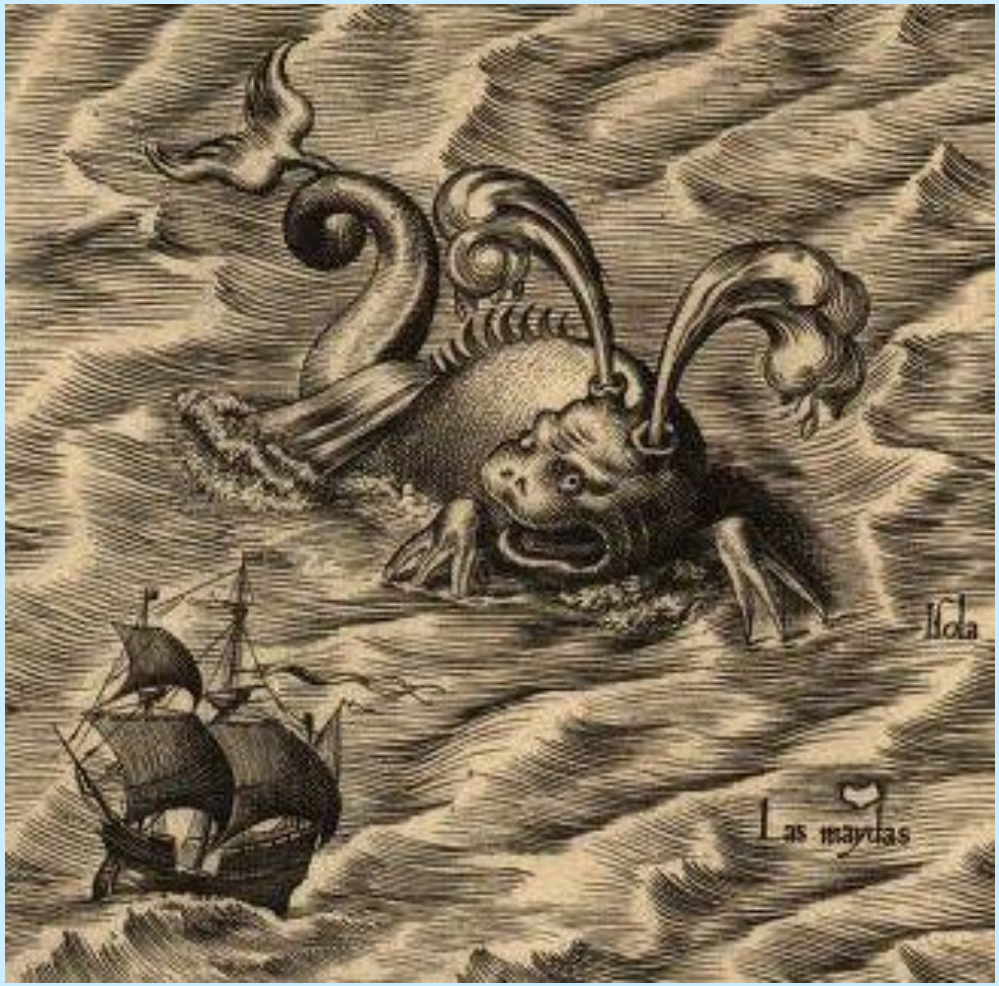


1562 Gutierrez map

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