Enhancement of the Environmental Studies Program Information System (ESPIS)

Michael Rasser, PhD
Marine Biologist
Bureau of Ocean Energy Management
Division of Environmental Science

Background

Two study profiles:

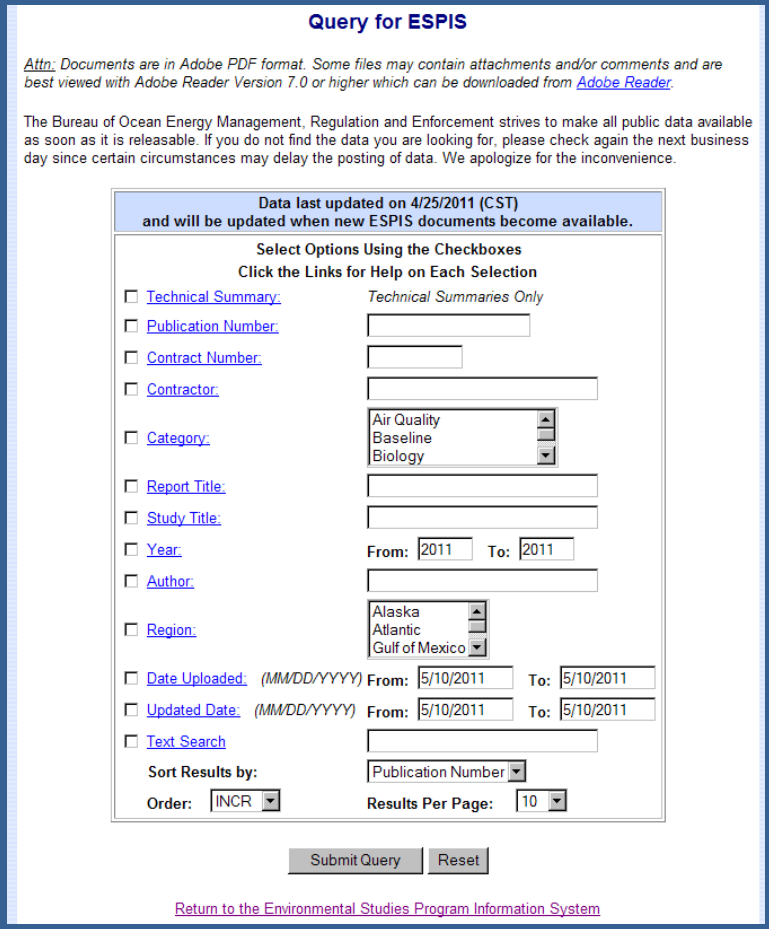
- *Enhancement of the Environmental Studies Program Information system (ESPIS)*
- *Support for Providing Environmental Studies Program Data within the Multipurpose Marine Cadastre (MMC)*

Objective: To improve access and discovery of data and information collected from environmental studies to the public

Environmental Studies Program Information System (ESPIS)

Current Capabilities:

- Provides access to reports and technical summaries
- .pdf documents
- Provides a relatively simple search capability



Query for ESPIS

Attn: Documents are in Adobe PDF format. Some files may contain attachments and/or comments and are best viewed with Adobe Reader Version 7.0 or higher which can be downloaded from Adobe Reader.

The Bureau of Ocean Energy Management, Regulation and Enforcement strives to make all public data available as soon as it is releasable. If you do not find the data you are looking for, please check again the next business day since certain circumstances may delay the posting of data. We apologize for the inconvenience.

Data last updated on 4/25/2011 (CST)
and will be updated when new ESPIS documents become available.

Select Options Using the Checkboxes
Click the Links for Help on Each Selection

- Technical Summary: *Technical Summaries Only*
- Publication Number:
- Contract Number:
- Contractor:
- Category: Air Quality, Baseline, Biology
- Report Title:
- Study Title:
- Year: From: 2011 To: 2011
- Author:
- Region: Alaska, Atlantic, Gulf of Mexico
- Date Uploaded: (MM/DD/YYYY) From: 5/10/2011 To: 5/10/2011
- Updated Date: (MM/DD/YYYY) From: 5/10/2011 To: 5/10/2011
- Text Search

Sort Results by: Publication Number
Order: INCR Results Per Page: 10

Submit Query Reset

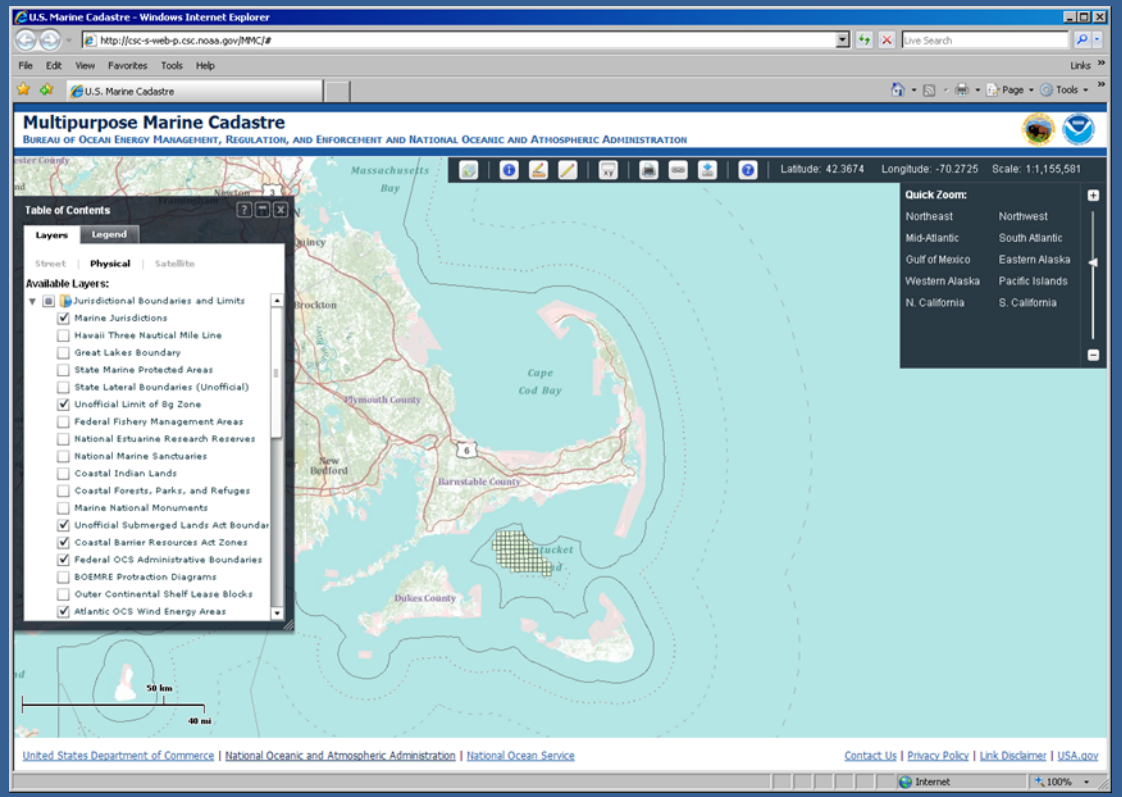
Return to the Environmental Studies Program Information System

How will ESPIS be Improved?

- Add the ability to store, retrieve, and search multiple media types
- Create an interface for uploading and maintaining data
- Enhance the ability to search the database
- Create a report generating capability
- Allow linkages with the Multipurpose Marine Cadastre (MMC)

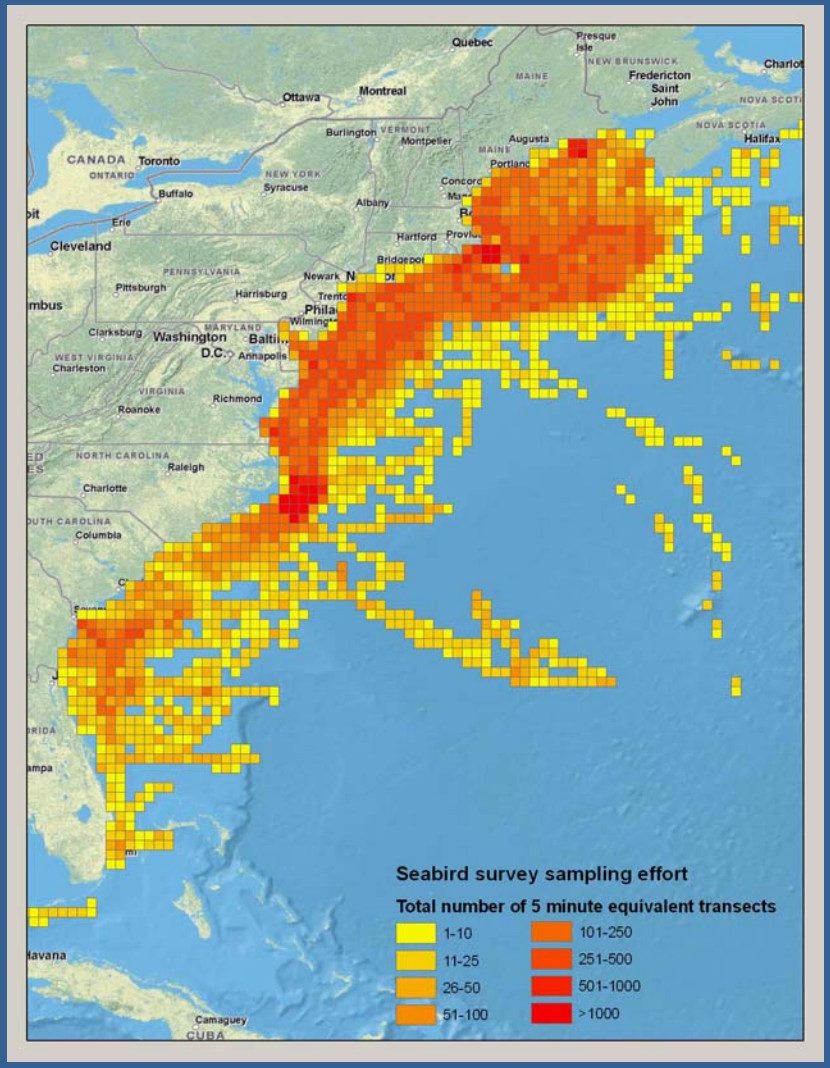
The Multipurpose Marine Cadastre (MMC)

- MMC was created to comply with the Energy Policy Act of 2005
- Managed in cooperation with NOAA
- Focus has been official U.S. boundaries
- Built on the latest ArcServer technology
- Utilizes web mapping services



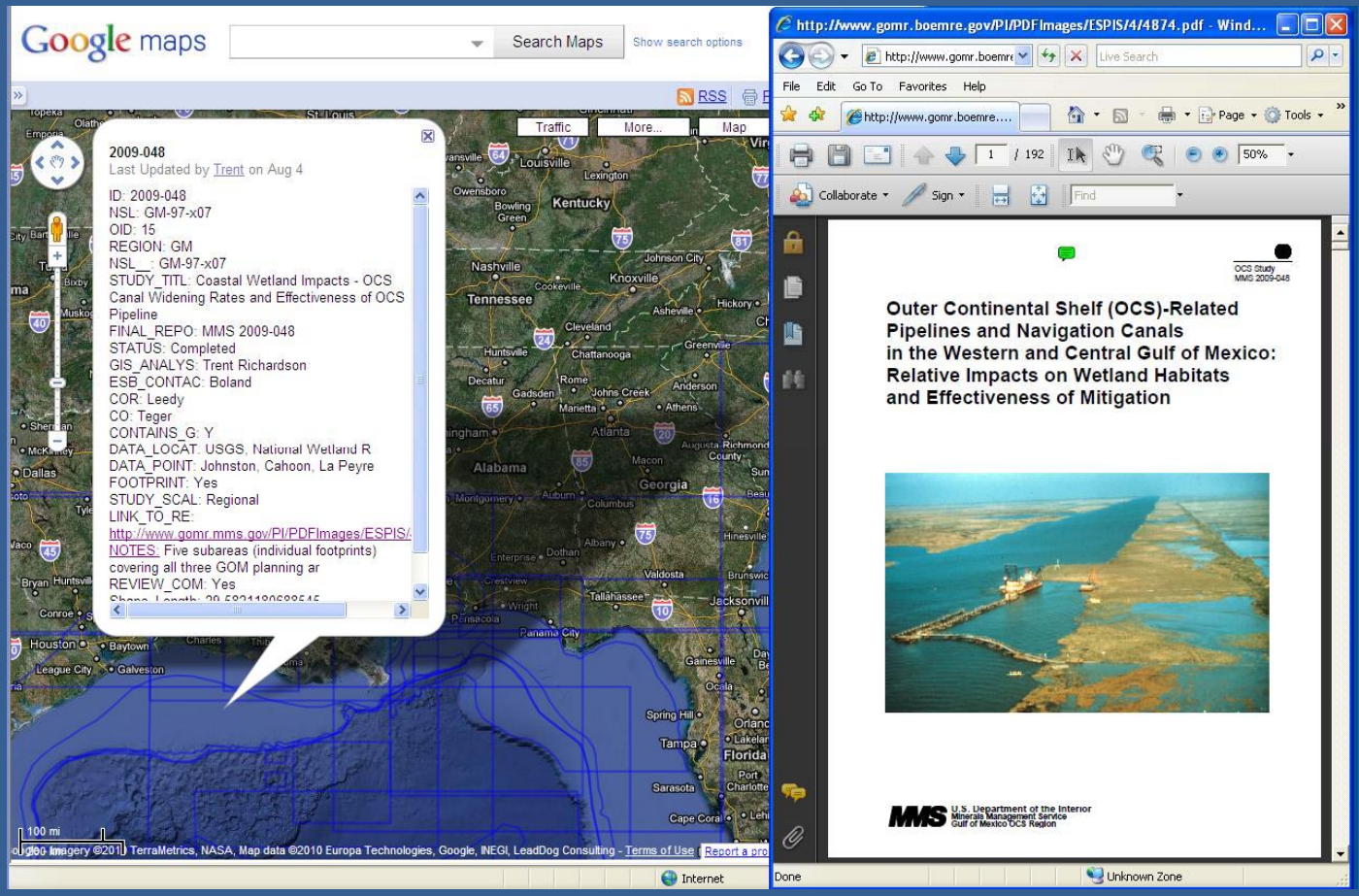
How will Studies data be incorporated into the Multipurpose Marine Cadastre?

- Serve ESP data in the MMC viewer via Web Mapping Services



Linking the Multipurpose Marine Cadastre and ESPIS

- Create functionality for geospatial searches of environmental studies within the MMC



Summary

- The Environmental Studies Program is improving how studies products are disseminated
- We are leveraging existing systems (ESPIS, MMC)
- Focus is on access, discovery, and use of the latest Internet based technology

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Preparing for Renewable Energy

Discipline	Title
Social Science	Renewable Energy Visual Evaluations
The Visual Impact Evaluation System for Offshore Renewable Energy (VIESORE) is an analytical and visualization tool for offshore renewable energy facilities.	

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Preparing for Renewable Energy

BOEM Information Need

Viewshed impacts of offshore renewable energy facilities on significant cultural properties such as sites listed or eligible for listing on the National Register of Historic Places as well as Traditional Cultural Properties must be considered as part of the Section 106 review under the National Historic Preservation Act.

Completion of this two-year Broad Agency Announcement will provide a GIS-based computer tool designed expressly to support the assessment of potential visual impacts associated with offshore renewable energy technologies, including wave, wind and ocean current facilities.

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Preparing for Renewable Energy

Objective

Develop a GIS-based computer tool designed expressly to support the assessment of potential visual impacts associated with offshore renewable energy technologies, including wave, wind, tidal flow and ocean current facilities.

Methods

VIESORE will consist of a landscape visualization system controlled by and integrated with a Toolbox for ArcGIS Desktop. The project will include a literature review, technology and needs assessments and development of a computer-based system that incorporates 3D computer models of energy facilities, among other parameters, to identify potential visual impacts from construction of offshore facilities.

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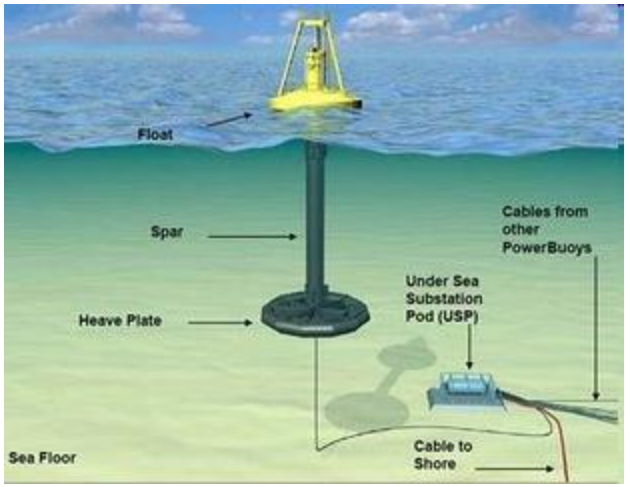
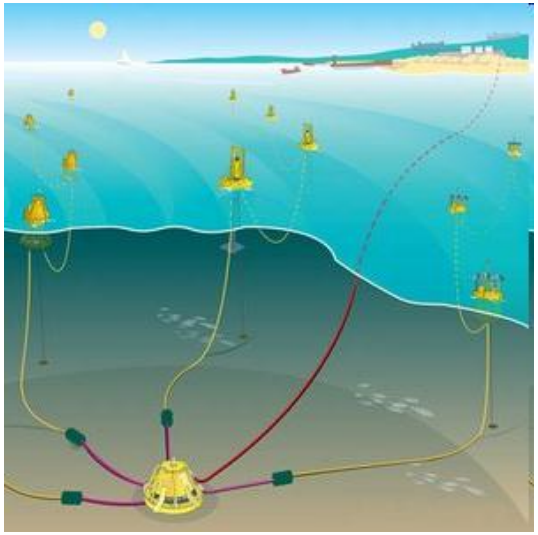
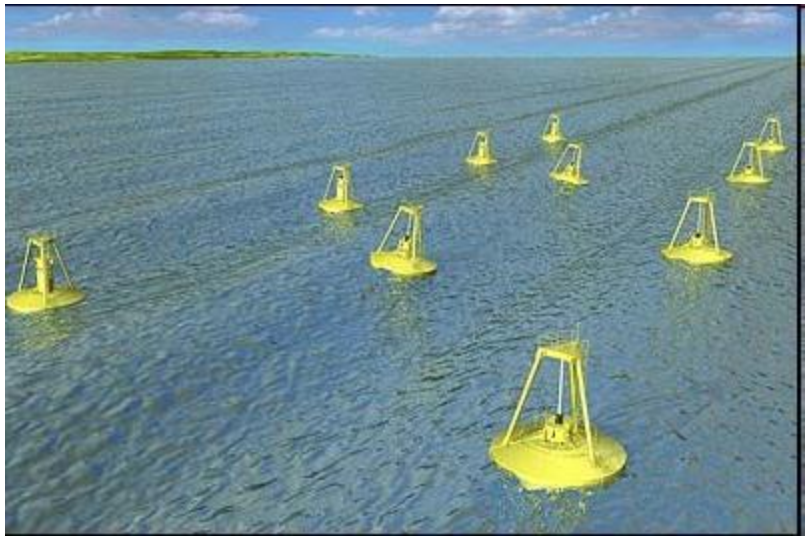
Preparing for Renewable Energy

Status

* Feb 2011 - Design workshop for BOEM staff
* Aug/Sept 2011 - Contract modification to evaluate existing offshore facilities in the UK
* Oct 2011 - Systems testing at GOMR office
* Ongoing - Literature Review and Product Design







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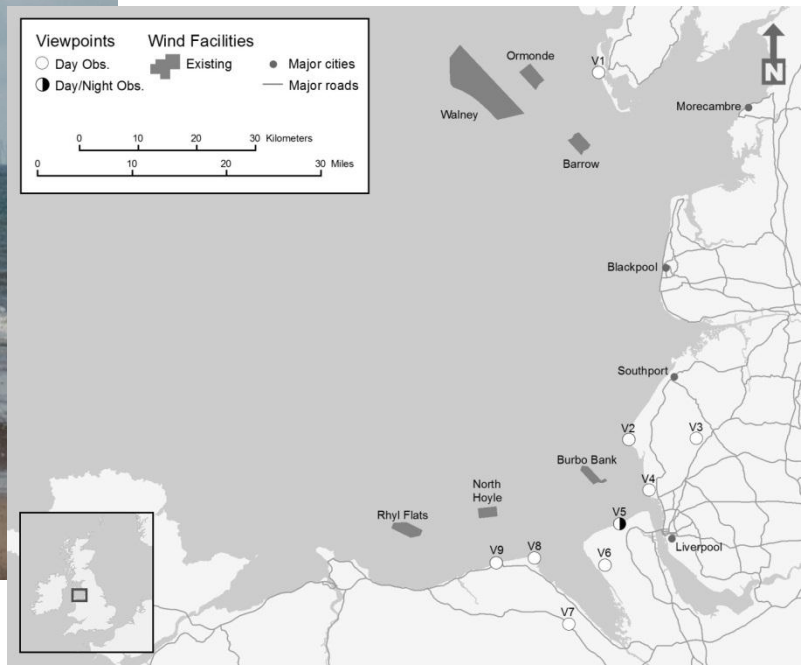
Preparing for Renewable Energy



Ormonde (foreground) and Walney (background) wind facilities photographed from Walney Island (Viewpoint V1), approximately 9.5 km (5.9 mi) from the closest turbine in the Ormonde facility and 17.0 km (10.6 mi) from the closest turbine in the Walney facility. Ormonde turbines are mounted on "quadruped" structures.

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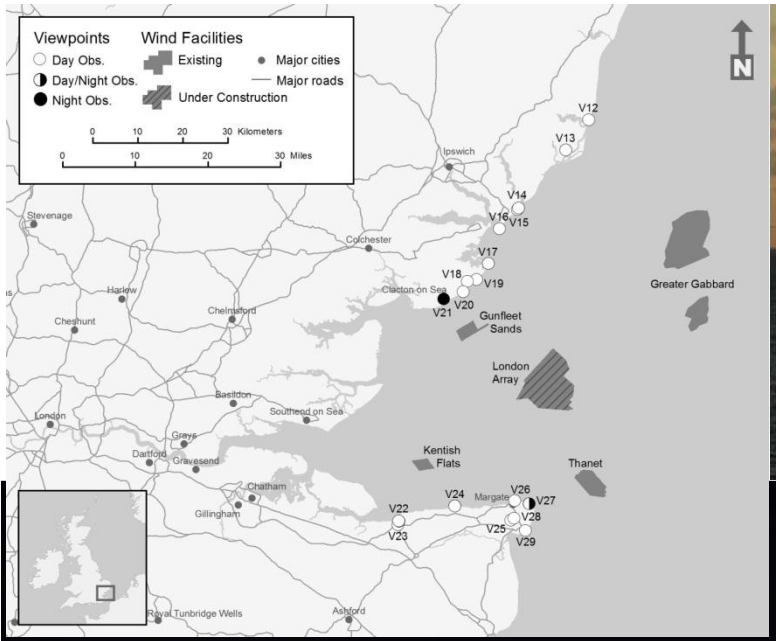

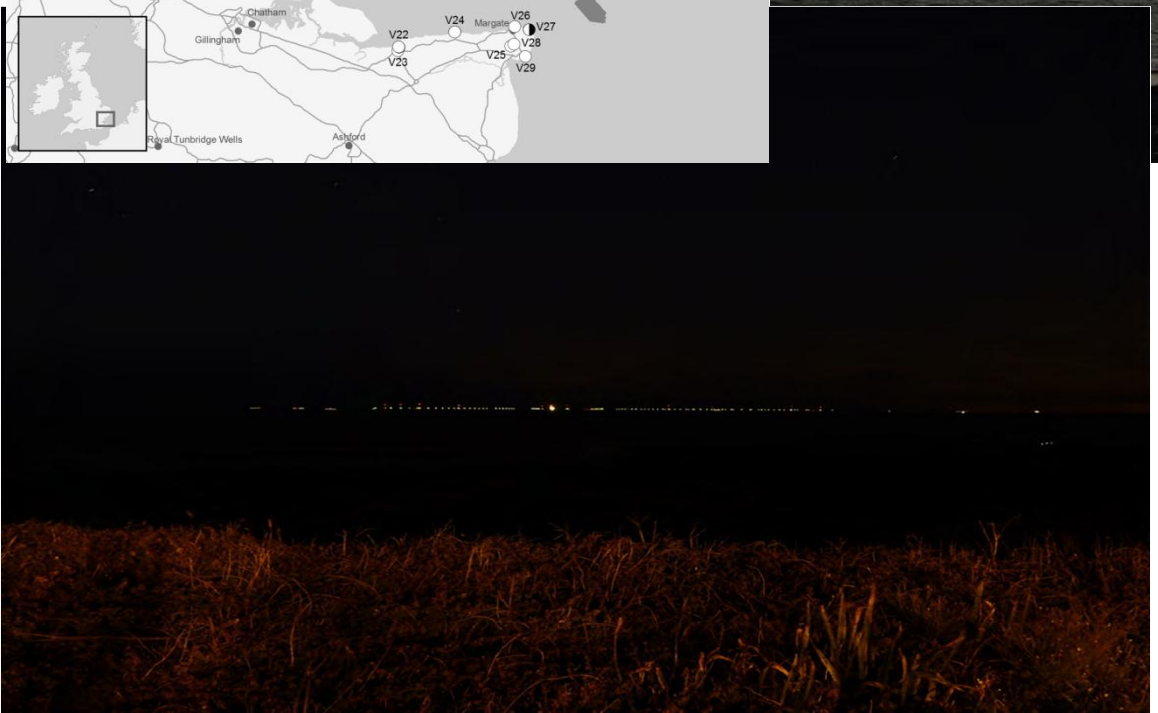

Thanet wind facility photographed from Fayreness Hotel (Viewpoint V27), approximately 12.3 km (7.6 mi) from the closest turbine. The turbines are backlit in the early morning. Also, photo from same location at night.

Google Earth

File Edit View Tools Add Help

Search

Fly To | Find

Fly to e.g., H

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Places | Add Content

- Thanet
  - SOP 301
    - SOP 301: Thanet - 9.5 mi
    - 301: Thanet
  - SOP 302
    - SOP 302: Thanet - 7.6 mi
    - 302: Thanet
    - 304: Thanet
    - 308: Thanet
  - SOP 303
  - SOP 311
- Walney
- UK_WTG
  - Barrow
  - Burbo Banks
  - Greater Gabbard
  - Gunfleet Sands I
  - Gunfleet Sands II

Layers

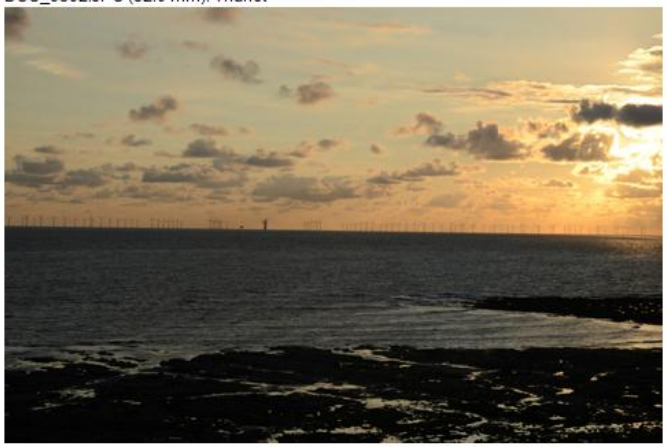
- Primary Database
  - Borders and Labels
  - Places
  - Photos
  - Roads
  - 3D Buildings
  - Ocean
  - Street View
  - Weather
  - Gallery
  - Global Awareness
  - More
- Terrain

304: Thanet

Observation ID:	304	SOP ID:	302
Date:	September 1, 2011	Time:	7:16 AM (BST)
Facility:	Thanet		
Obs. Distance:	7.6 mi	Direction:	ENE
Weather:	Partly Cloudy		
WTG Backdrop:	Sky		
WTG Lighting Quality:	Even Sun		
WTG Lighting Angle:	Backlit		
Average visiblity rating:	5.00		

View Photos | Observation Details | Visibility Rating Forms

DSC_9392.JPG (52.0 mm): Thanet



Directions: To here - From here

Thanet

GS - 24.7 mi

SOP3

A255

Getmapping plc

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

51°24'51.04" N 1°33'42.24" E elev -45 ft

start | Inbox - Microsoft Out... | M10PG0096_M10PC0... | 06 ACUA Workshop_... | M11PD00123 SAC.ppt | M10PG00093_M10PC... | Visualization Study | Google Earth

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Supporting and Monitoring Conventional Energy and Preparing for Renewable Energy

Discipline	Title
Social Science	Inventory and Analysis of Cultural and Submerged Archaeological Site Occurrence on the Pacific OCS

Update baseline information of the location of known, reported and potential underwater and coastal cultural heritage sites on the Pacific OCS.

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Supporting and Monitoring Conventional Energy and Preparing for Renewable Energy

BOEM Information Need

Development of energy and mineral resources on the OCS off the west coast of the United States is expected to continue, whether as a result of the opportunity for development of renewable energy resources created by the Energy Policy Act of 2005, proposals by developers for exploiting strategic mineral resources, or continued development of existing oil and gas facilities along the southern California coast. Therefore, a complete understanding of known and potential submerged cultural resources, as well as an understanding of potential visual impacts to coastal historic properties, will be crucial for environmental assessment and mitigation of potential adverse effects to these resources.

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Supporting and Monitoring Conventional Energy and Preparing for Renewable Energy

Objectives

*** Through primary and secondary resources, develop an Access database of known, reported, and potential submerged cultural resources (primarily shipwrecks) on the Pacific OCS**

*** Assess areas of the Pacific OCS for prehistoric site potential, develop a model for where submerged prehistoric sites might be located and recommend an appropriate survey methodology for locating submerged prehistoric sites on the OCS**

*** Develop an Access database of coastal historic properties and traditional cultural properties that could incur viewshed impacts from construction of offshore renewable energy facilities**

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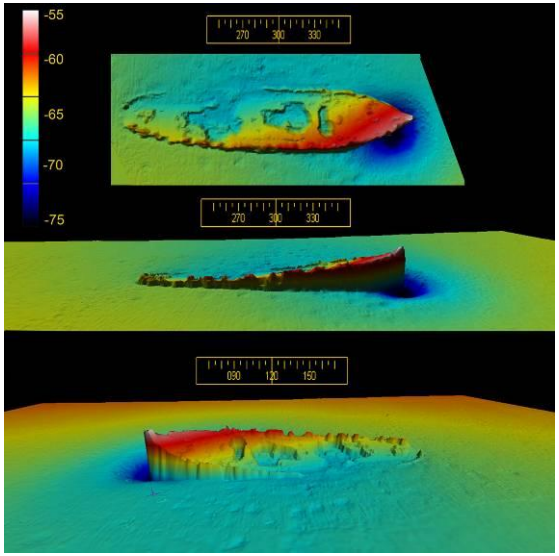
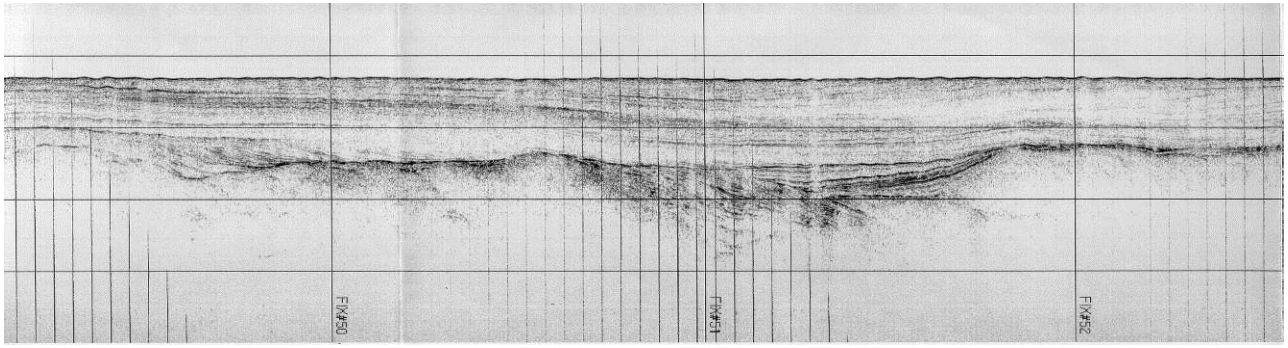
Methods

* Using the previous two POCS baseline studies, synthesize data collected over last 20 years to develop an inventory of historic shipwrecks;

* Evaluate current theories on prehistoric settlement patterns, paleoshorelines, sea level rise and regional geology to identify areas of potential submerged prehistoric sites and an appropriate survey methodology to locate these sites

* Compile information from west coast SHPOs on coastal historic properties and solicit information from Native American communities on areas of traditional importance





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Status

* Compiling existing databases

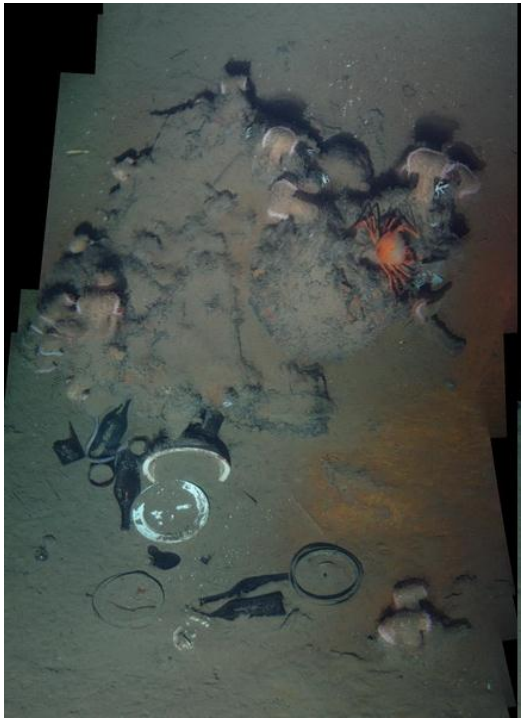
* Modifying the design of BOEM shipwreck database

* Completing literature review for submerged prehistoric sites and continuing review of paleoenvironmental information

* Developed design draft database for coastal properties

* Compiling existing data from SHPOs

* Soliciting information from coastal Tribal communities



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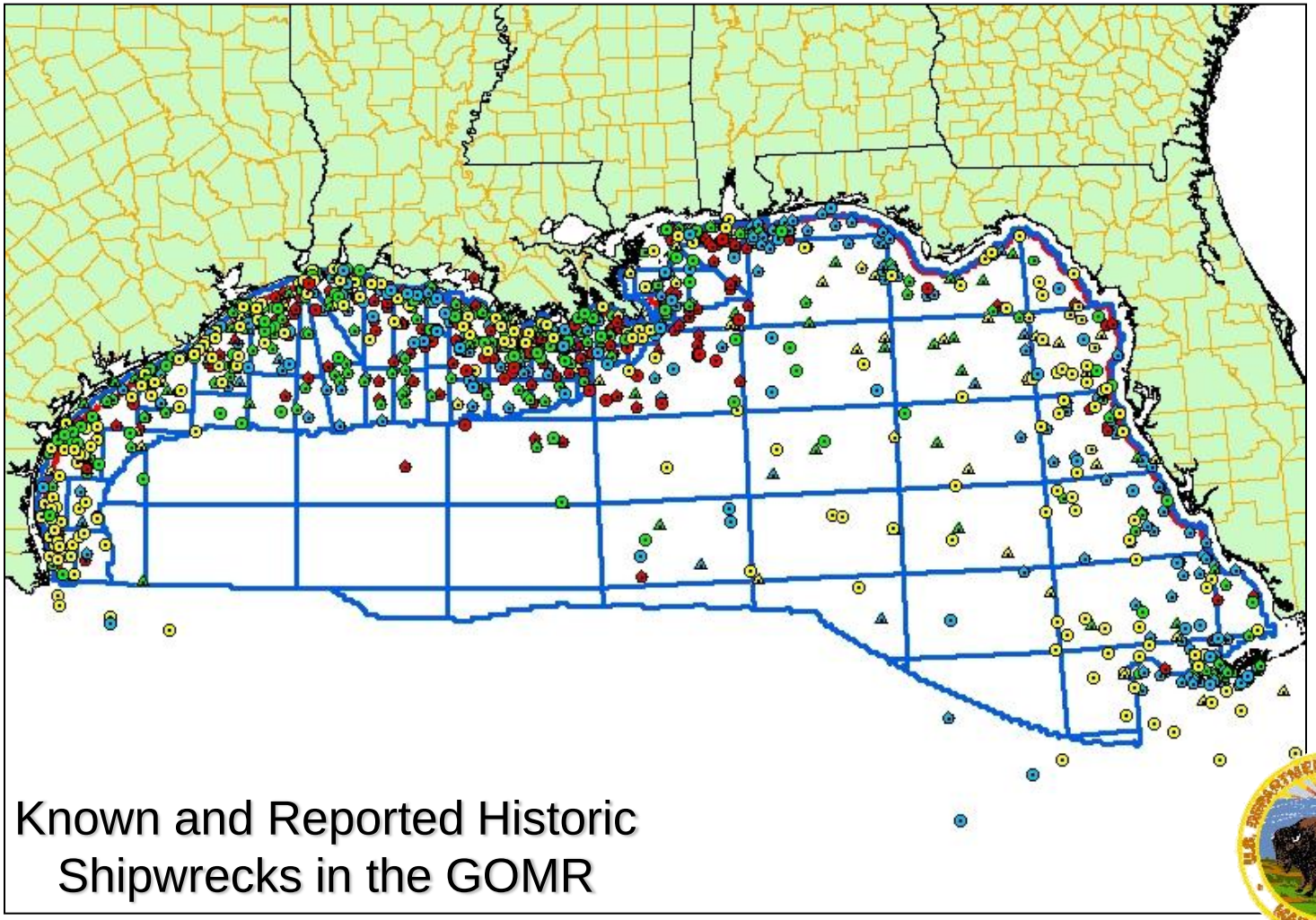

Known and Reported Historic Shipwrecks in the GOMR

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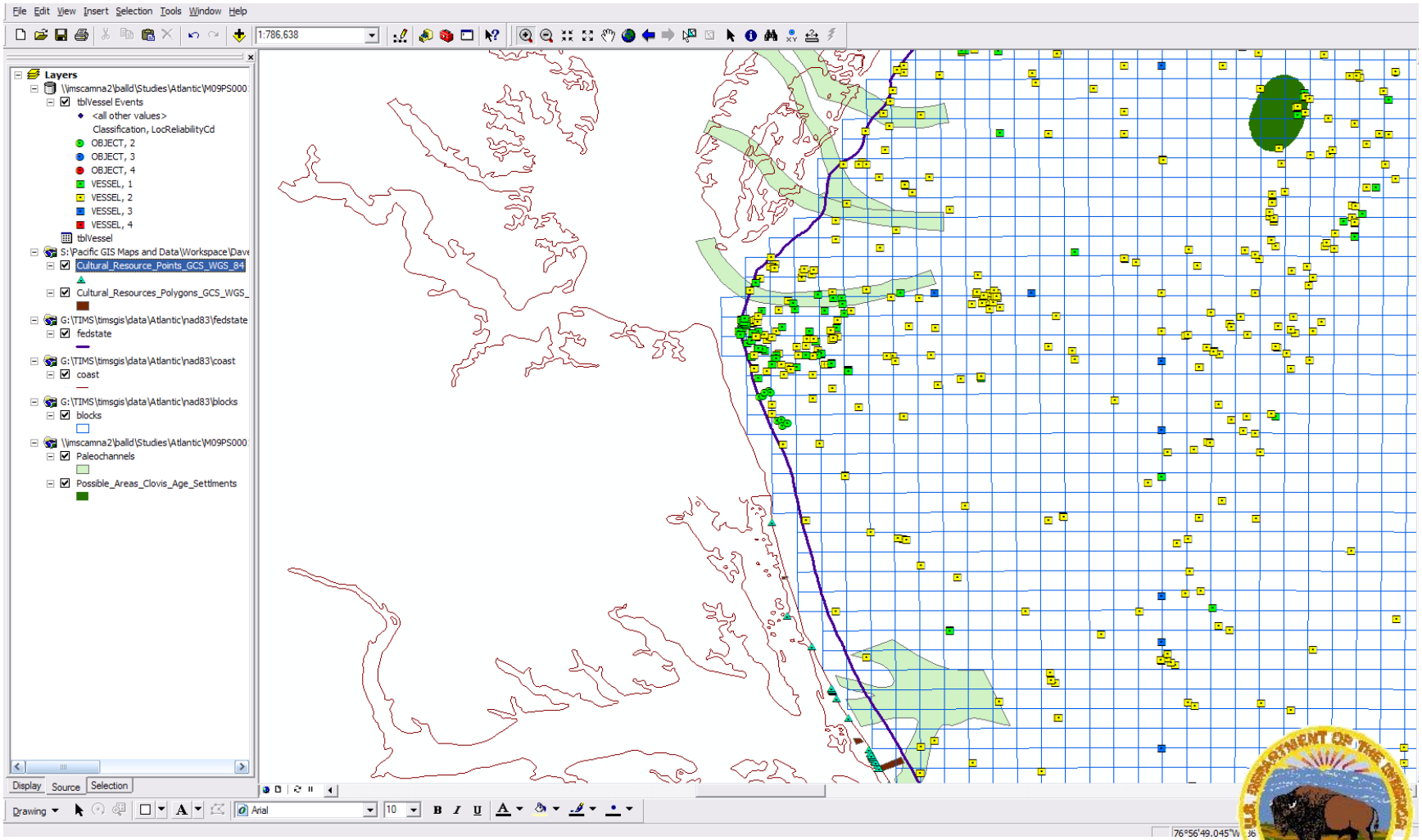


Inventory and Analysis of Archaeological Site Occurrence on the Atlantic OCS; Evaluation of Visual Impacts on Historic Properties

Best Practices for Physical Process and Impact Assessment

- Objectives:
  - Design and implement a morphological modeling approach to improve the present understanding of impacts to near-field and far-field physical processes related to the modification of offshore bathymetry
  - Develop criteria for determining the necessity of site-specific modeling and best practices as to modeling approaches

Best Practices for Physical Process and Impact Assessment

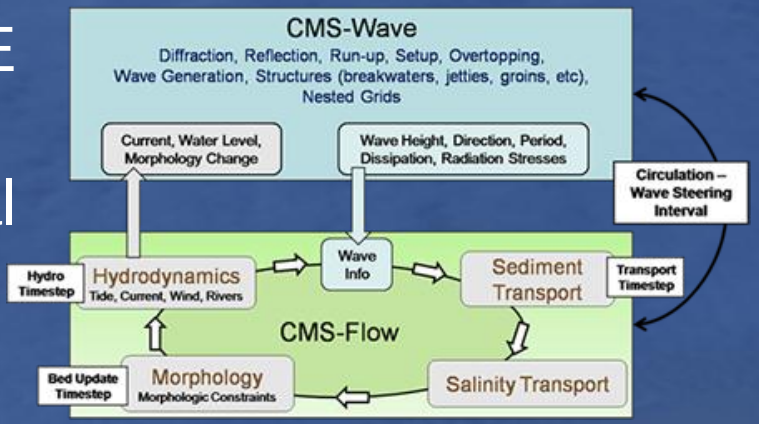
- Research Team:
  - Applied Coastal Research and Engineering (Ramsey, Byrnes, Kelley)
  - University of Delaware (Kirby, Shi)
  - Danish Hydraulic institute (Zyserman)
  - Ben Gerwick (Misra, Driscoll)
  - University of Genoa (Vittori)

- FY10 Award: ~$385,000 (option ~$110,000)

- Period of Performance: Oct. 2010 – Sept. 2012

Best Practices for Physical Process and Impact Assessment

- Methods:
- WP 1: Evaluate existing morphologic modeling literature. Identify study area with adequate existing forcing and validation data for inter-model comparison
- WP 2: Site-specific implementation of nested models. Test against observed wind, wave, current, sediment transport and morphologic response
  - 3D: ROMS/CSTMS; NearCOM
  - 2D (depth-averaged): DHI MIKE 21 Coastal Area Morphological Modeling Shell; USACE Coastal Modeling System
  - Sensitivity testing, process filtering, skill assessment

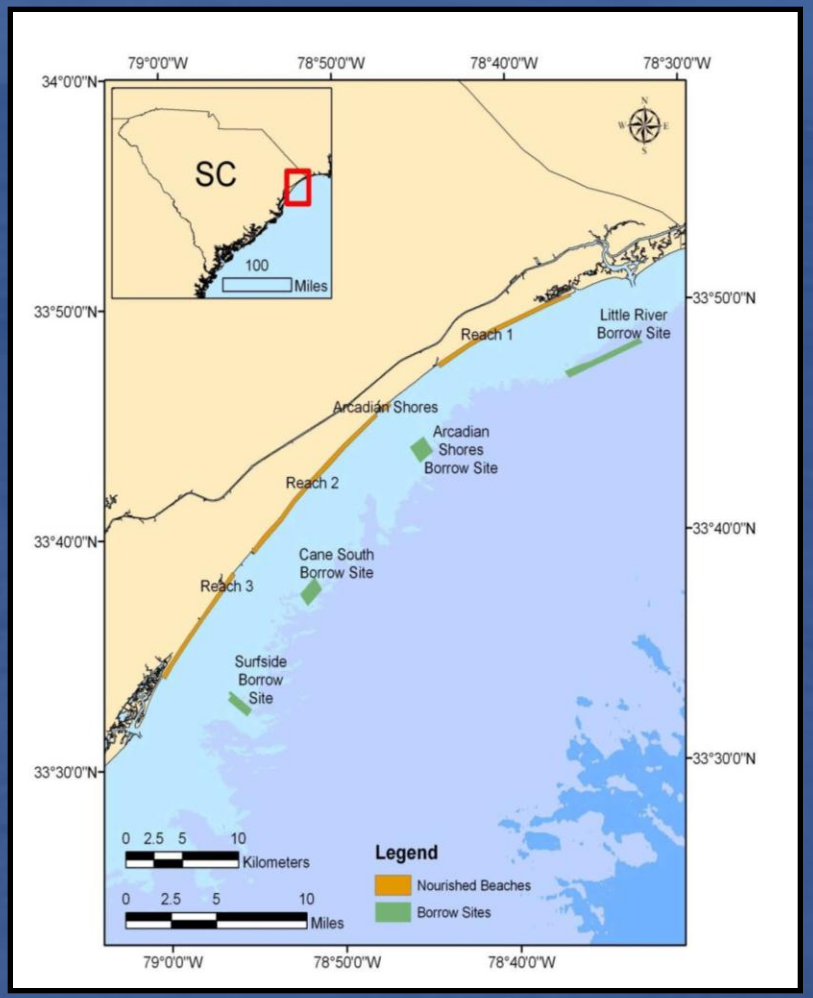


Best Practices for Physical Process and Impact Assessment

- Methods:
  - WP 3: Implement best performing candidate models, including at least one community model, using a range of 1) geometries in flat bed and sand ridge settings and 2) forcing to evaluate scale of near-field and far-field impacts
  - WP 4 (optional): if modeling supports, prepare impact modeling guidelines, addressing need and best practices for modeling near-field and far-field impacts

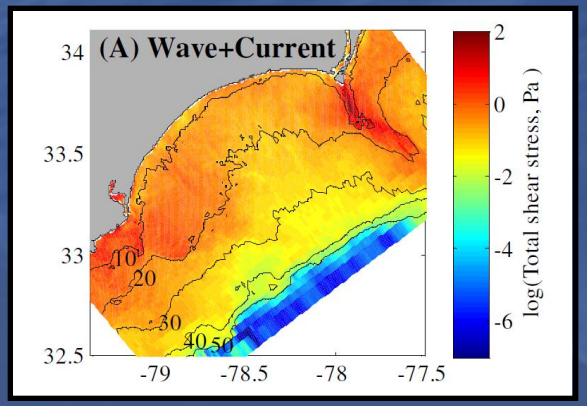
Best Practices for Physical Process and Impact Assessment

- **Status**:
- Review of morphologic modeling literature
- Data review and compilation for:
  - Jupiter Island (FL)
  - Sandbridge / Sandbridge Shoal (VA)
  - Brevard / Canaveral Shoals (FL)
  - Myrtle Beach / Long Bay (SC)
- Myrtle Beach, South Carolina: candidate study area for model comparison and morphologic modeling.

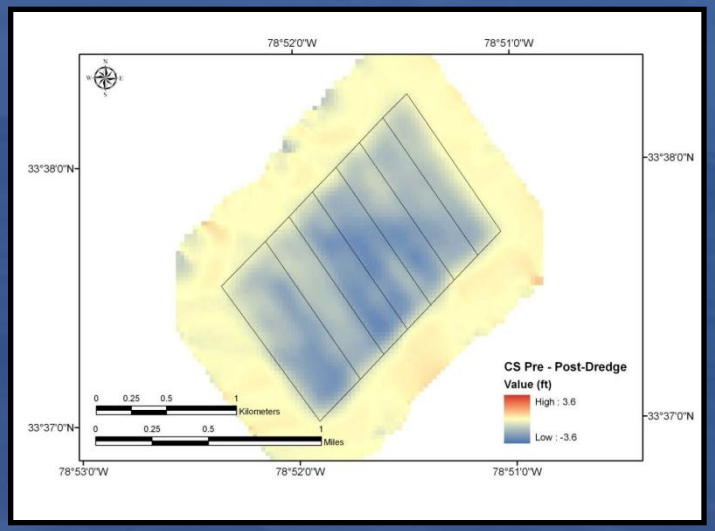


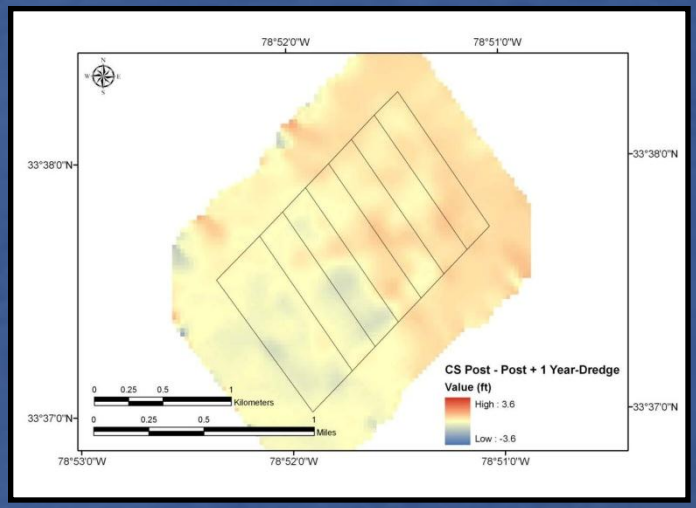
Best Practices for Physical Process and Impact Assessment

- NCEP/NCAR wind, SWAN / WWIII wave, ADCIRC / ROMS nesting grids (e.g., Voulgaris, Warner, Haas, Ma, Xu)
- ADCP current and wave data
- Geotechnical and bathy data
- Initial model parameterization for all four model suites.



Ma et al. 2011





McCoy et al. 2010