

OceanNOMADS – An Update:

Real-time and Retrospective Access to Operational U.S. Ocean Prediction Products

Presentation to:
11th Symposium on the Coastal Environment
93rd AMS Annual Meeting

John Harding, Northern Gulf Institute

Scott Cross, NOAA National Coastal Data Development Center

Frank Bub, Naval Oceanographic Office

Ming Ji, NOAA National Centers for Environmental Prediction

Charles Carleton, NOAA National Coastal Data Development Center

Hendrik Tolman, NOAA National Centers for Environmental Prediction

A. Rost Parsons, NOAA National Coastal Data Development Center



NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

NOMADS: Inspiration for OceanNOMADS

NOMADS

National Operational Model Archive & Distribution System

- NCEP/NCDC partnership
- Real-time and retrospective access to NOAA operational atmospheric model output

<http://nomads.ncdc.noaa.gov/data.php>

<http://nomads.ncep.noaa.gov/>

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS

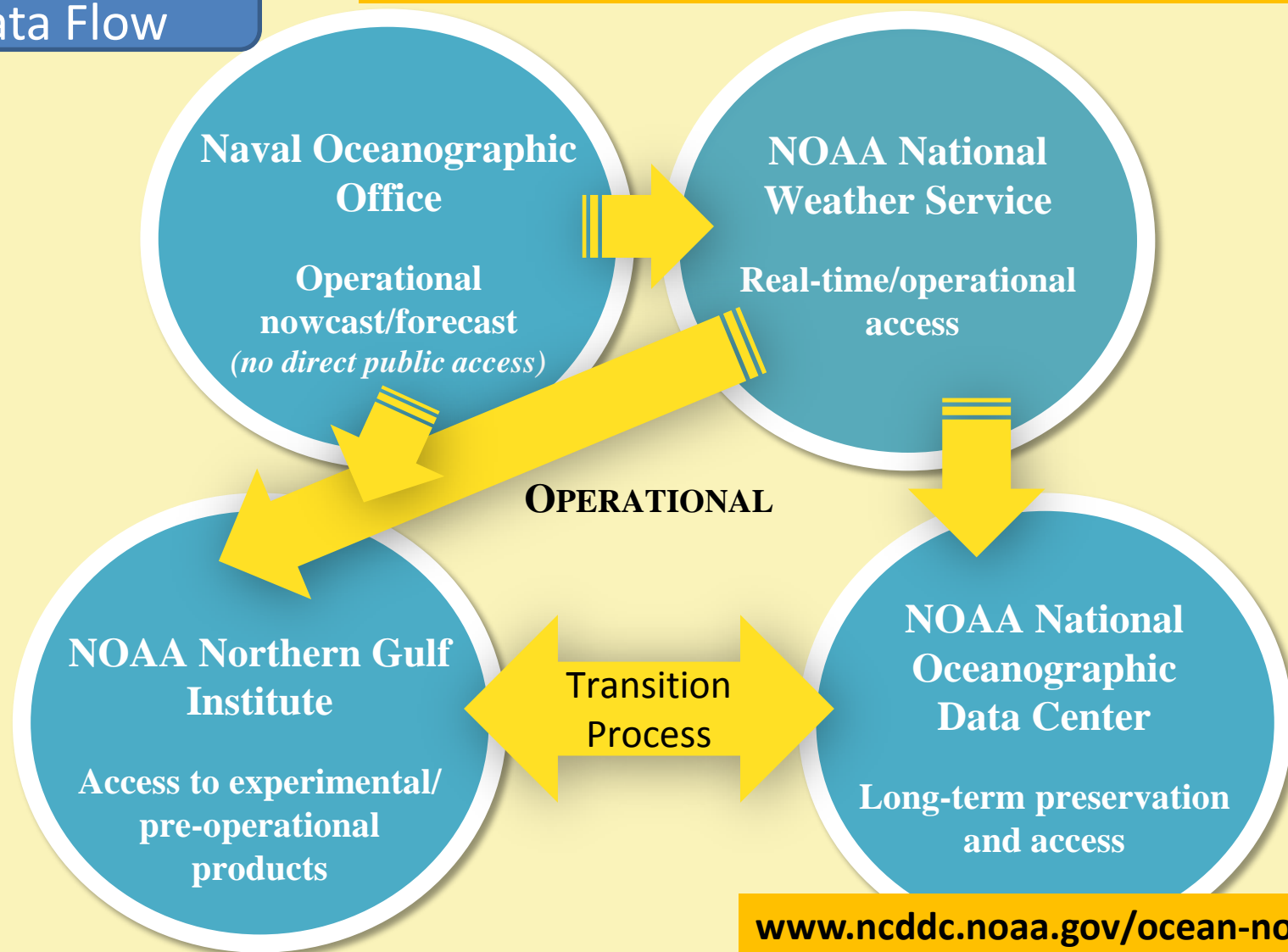
OceanNOMADS

- Navy/NCEP/NODC partnership
- Real-time and retrospective access to Navy and NOAA selected operational & pre-operational ocean model output
- Web service graphics for quick look at retrospective data

<http://NorthernGulfInstitute.org>
<http://www.ncddc.noaa.gov/ocean-nomads/>
www.opc.ncep.noaa.gov/newNCOM/NCOM_currents.shtml

OceanNOMADS Data Flow

www.opc.ncep.noaa.gov/newNCOM/NCOM_currents.shtml



www.ncddc.noaa.gov/ocean-nomads

R&D

LONG-TERM ACCESS


www.northerngulfinstitute.org/edac/ocean_nomads.php

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS – NCDDC production Site

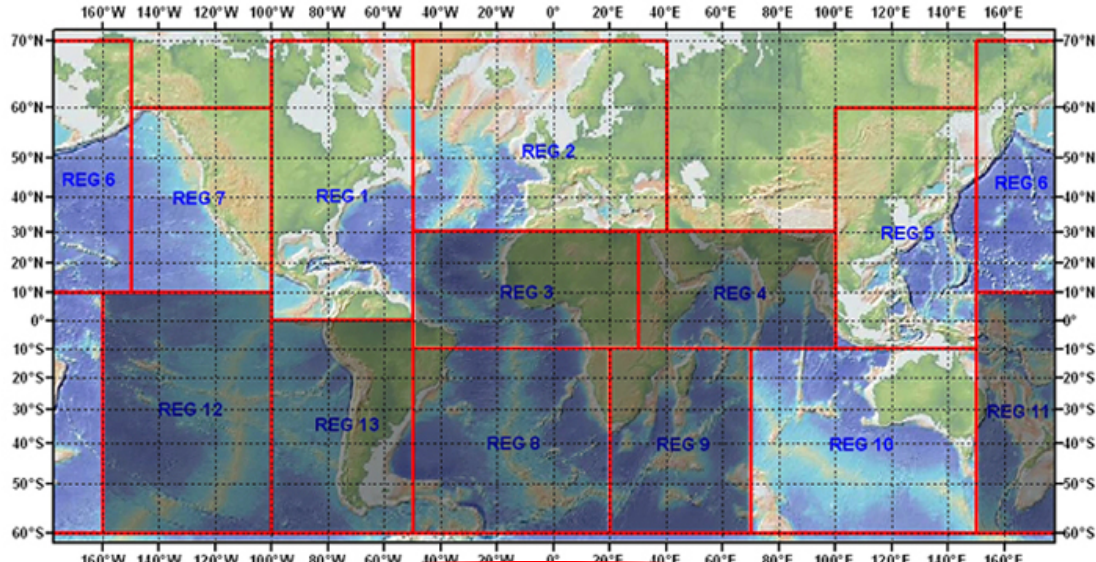
NOAA HOME WEATHER OCEANS FISHERIES CHARTING SATELLITES CLIMATE RESEARCH COASTS CAREERS

 **NOAA** NATIONAL COASTAL DATA DEVELOPMENT CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Maintenance: All public services (including FTP services) will be affected for maintenance. **Beginning:** 12/06/2011 4:30 PM CST **Ending:** 12/06/2011 8:00 PM CST

Search NCDDC you are here: [home](#) → [ocean nomads](#) → [navy coastal ocean model global domain \(2008 - present\)](#)

Home
Who We Are ▶
What We Do ▶
OceanNOMADS ▼
Introduction
Global NCOM
RTOFS
CFSR
OER Data Management ▶
Metadata ▶
Interactive Maps ▶
Regional Collaborations ▶



Navy Coastal Ocean Model Global Domain (2008 - present)

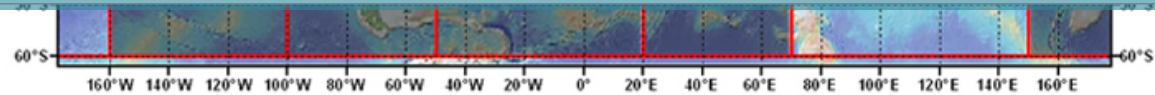
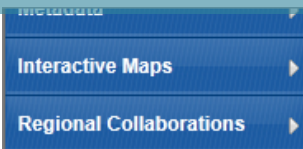
The Global NCOM is an ocean prediction system run by the Naval Oceanographic Office (NAVOCEANO) as the Navy's real-time operational global nowcast/forecast system. The Naval Research Laboratory developed NCOM based on the Princeton Ocean Model with time invariant hybrid (sigma over τ) vertical coordinates. See Navy's NCOM Publications

<http://www.ncddc.noaa.gov/ocean-nomads>

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS: U.S. West Coast Cutout from global model



Navy Coastal Ocean Model Global Domain (2008 - present)

The Global NCOM is an ocean prediction system run by the Naval Oceanographic Office (NAVOCEANO) as the Navy's real-time operational global nowcast/forecast system. The Naval Research Laboratory developed NCOM based on the Princeton Ocean Model with time invariant hybrid (sigma over Z) vertical coordinates. See [Navy's NCOM Publications Web page](#) for additional information. For distribution, NAVOCEANO interpolates the output onto a regular latitude-longitude grid in the horizontal and a series of standard depths in the vertical, and parses the global domain into 13 regions. This site provides access to regions around the U.S. and its territorial waters. Additionally, access is provided to global data for the surface only.

Users who require operational, realtime access to this data are directed to the high-availability servers at the [National Centers for Environmental Prediction](#).

Please Note: You must enable JavaScript and disable pop-up blocking to access data and products available from this page. The pop-up window that supports the product and data access links provides window history support when left open and successive selections are made. With the pop-up window in focus, you may use the Alt-left or Alt-right arrow key combination to move backward or forward through the window history.

Available Services

Access to G-NCOM data is provided via Thredds Data Server. Supported services include bulk file download in the native netCDF format, OPeNDAP subsetting, and timeseries aggregation. Visualization services are provided via ERDDAP.


G-NCOM data and services					
Region 1	Metadata	Daily Data	Timeseries Aggregation	Visualize 2-D Fields	Visualize 3-D Fields
Region 2	Metadata	Daily Data	Timeseries Aggregation	Visualize 2-D Fields	Visualize 3-D Fields
Region 5	Metadata	Daily Data	Timeseries Aggregation	Visualize 2-D Fields	Visualize 3-D Fields
Region 6	Metadata	Daily Data	Timeseries Aggregation	Visualize 2-D Fields	Visualize 3-D Fields
Region 7	Metadata	Daily Data	Timeseries Aggregation	Visualize 2-D Fields	Visualize 3-D Fields
Global (sfc)	Metadata	Daily Data	Timeseries Aggregation	Visualize 2-D Fields	Visualize 3-D Fields

**US Pacific Coast
Sub-Region**

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS: Web Service Example– 10 m Temperature

**NOAA** NATIONAL COASTAL
DATA DEVELOPMENT CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ERDDAP

Brought to you by [NOAA NMFS SWFSC ERD](#)

[ERDDAP](#) > [griddap](#) > Make a Graph ?

Dataset Title: **Global NCOM for Region 07, 3D aggregation** [RSS](#)
Institution: Naval Oceanographic Office (Dataset ID: NCOM_Region7_3D_agg)
Information: [Summary](#) | [License](#) | [Metadata](#) | [Background](#) | [Data Access Form](#)

Graph Type: ?
X Axis: ?
Y Axis: ?
Color: ?

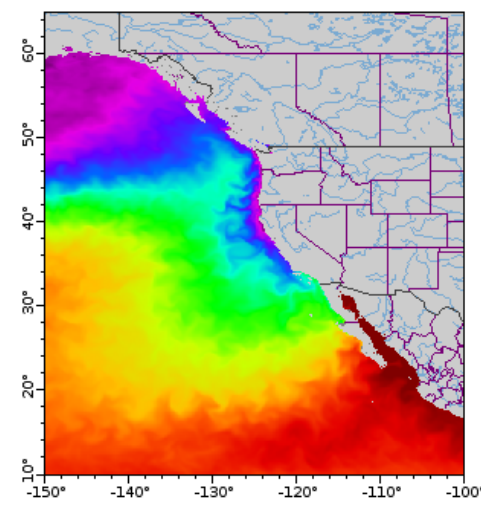
Dimension Ranges ? **Start** ? **Stop** ?
time (UTC) ? specify just 1 value → 2011-09-17T00:00:00Z
altitude (m) ? specify just 1 value → -10.0
latitude (degrees_north) ? 10.0 65.0
longitude (degrees_east) ? -150.0 -100.0

Graph Settings
Color Bar: Continuity: Scale:
Min: 10 Max: 30 N Sections:
Draw the land mask:

(Please be patient. It may take a while to get the data.)

Optional:
Then set the File Type: and

Click on the map to specify a new center point. ?
Zoom:



Water Temperature (degC)

Multiple graphic
output possibilities
including .kml

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

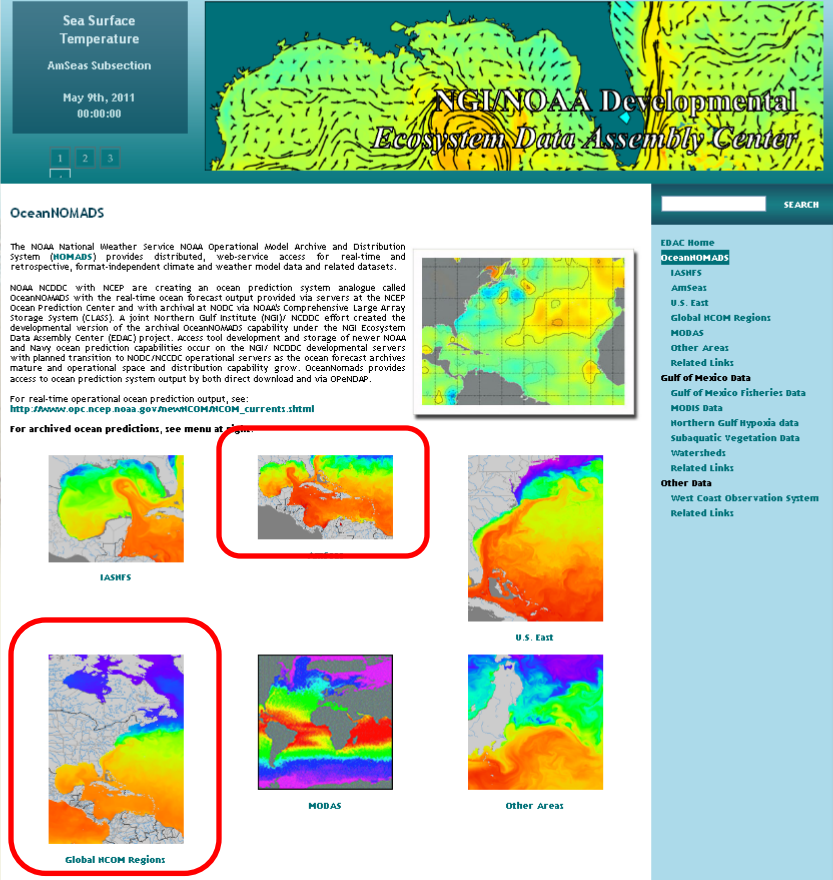
OceanNOMADS – NGI/NCDDC R&D Site

NCEP OPC for Near-Term Ocean Prediction Access

NGI/NCDDC for Retrospective Access & NCEP Backup

Global subsets available on NCDDC production server

AMSEAS Regional Model Example



The screenshot shows the OceanNOMADS website interface. At the top, there's a header for 'Sea Surface Temperature' and 'AmSeas Subsection' with a date 'May 9th, 2011 00:00:00'. Below this is a large map of the Gulf of Mexico and surrounding regions, labeled 'NGI/NOAA Developmental Ecosystem Data Assembly Center'. The main content area is titled 'OceanNOMADS' and contains text about the NOAA National Weather Service NOAA Operational Model Archive and Distribution System (NOMADS). It also mentions the NOAA NCDDC with NCEP are creating an ocean prediction system analogue called OceanNOMADS. There are several small maps showing different regions: IASHFS, U.S. East, MODAS, and Other Areas. A sidebar on the right contains navigation links like 'EDAC Home', 'OceanNOMADS', 'IASHFS', 'AmSeas', 'U.S. East', 'Global HCOM Regions', 'MODAS', 'Other Areas', 'Related Links', 'Gulf of Mexico Data', 'Gulf of Mexico Fisheries Data', 'MODIS Data', 'Northern Gulf Hypoxia data', 'Subaquatic Vegetation Data', 'Watersheds', 'Related Links', 'Other Data', 'West Coast Observation System', and 'Related Links'.

http://www.northerngulfinstitute.org/edac/ocean_nomads.php

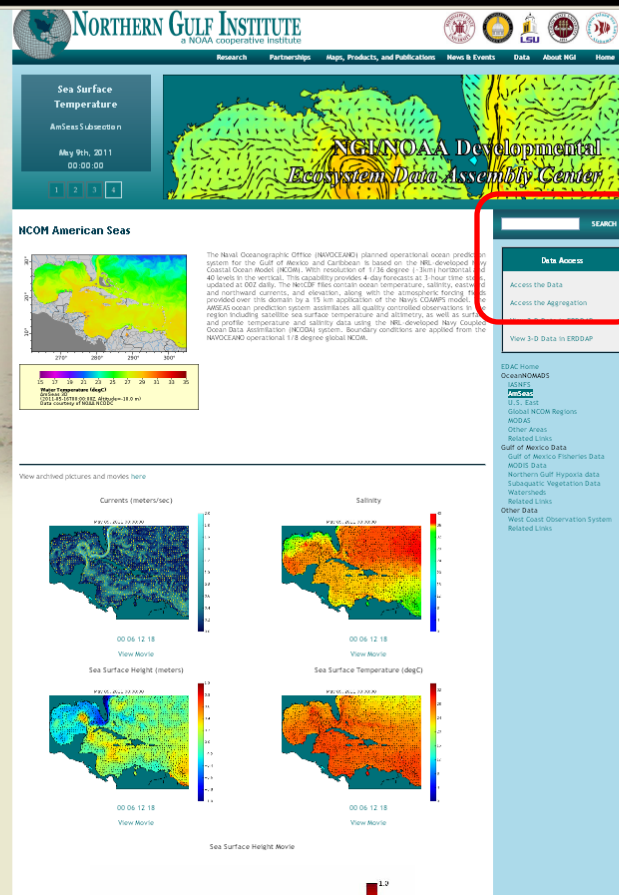
NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS: AMSEAS Regional Model Access

NAVOCEANO AMSEAS
Prediction System

OpenDAP
Data Access

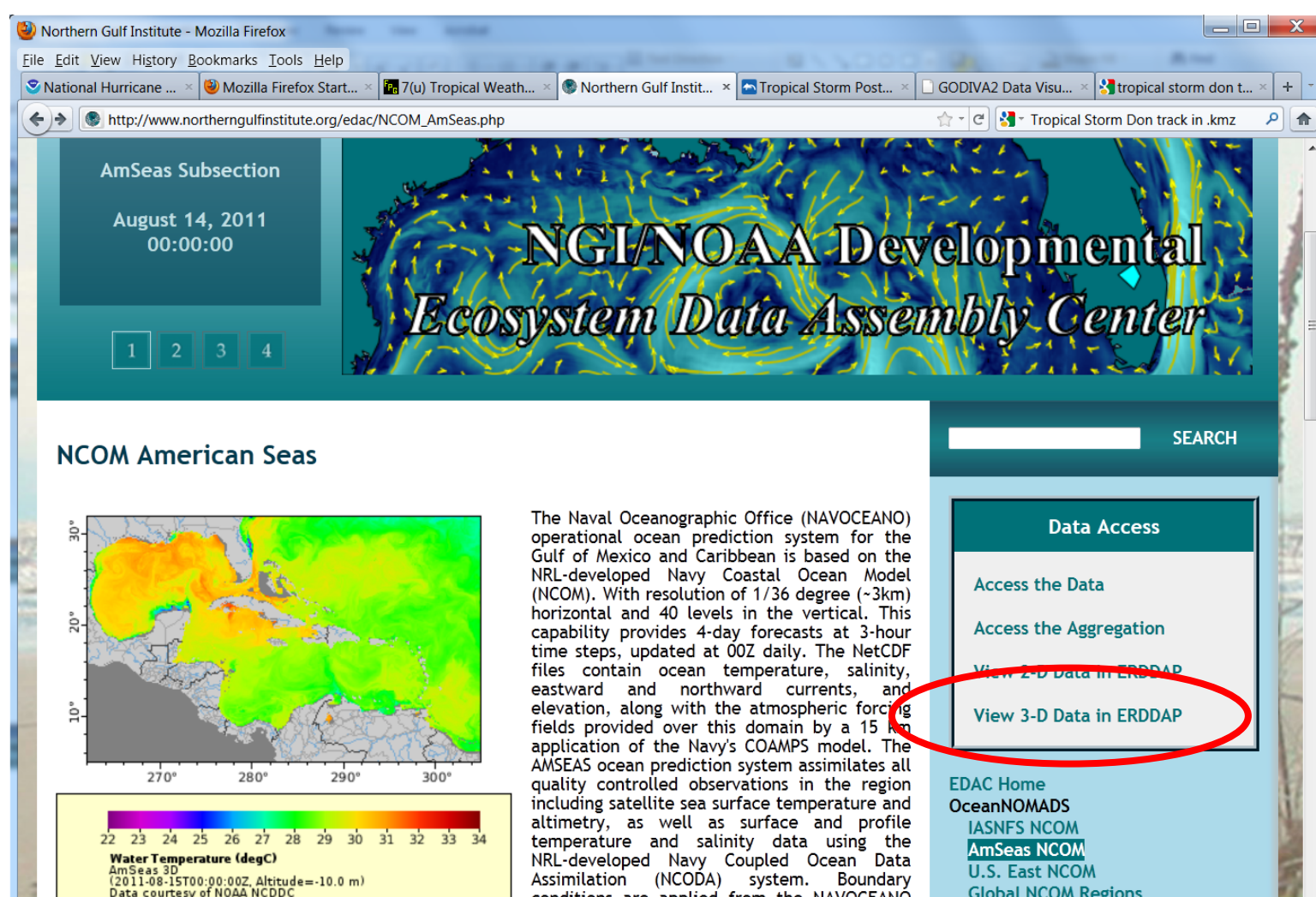


http://www.northerngulfinstitute.org/edac/NCOM_AmSeas.php

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS: AMSEAS Web Service Graphics Access

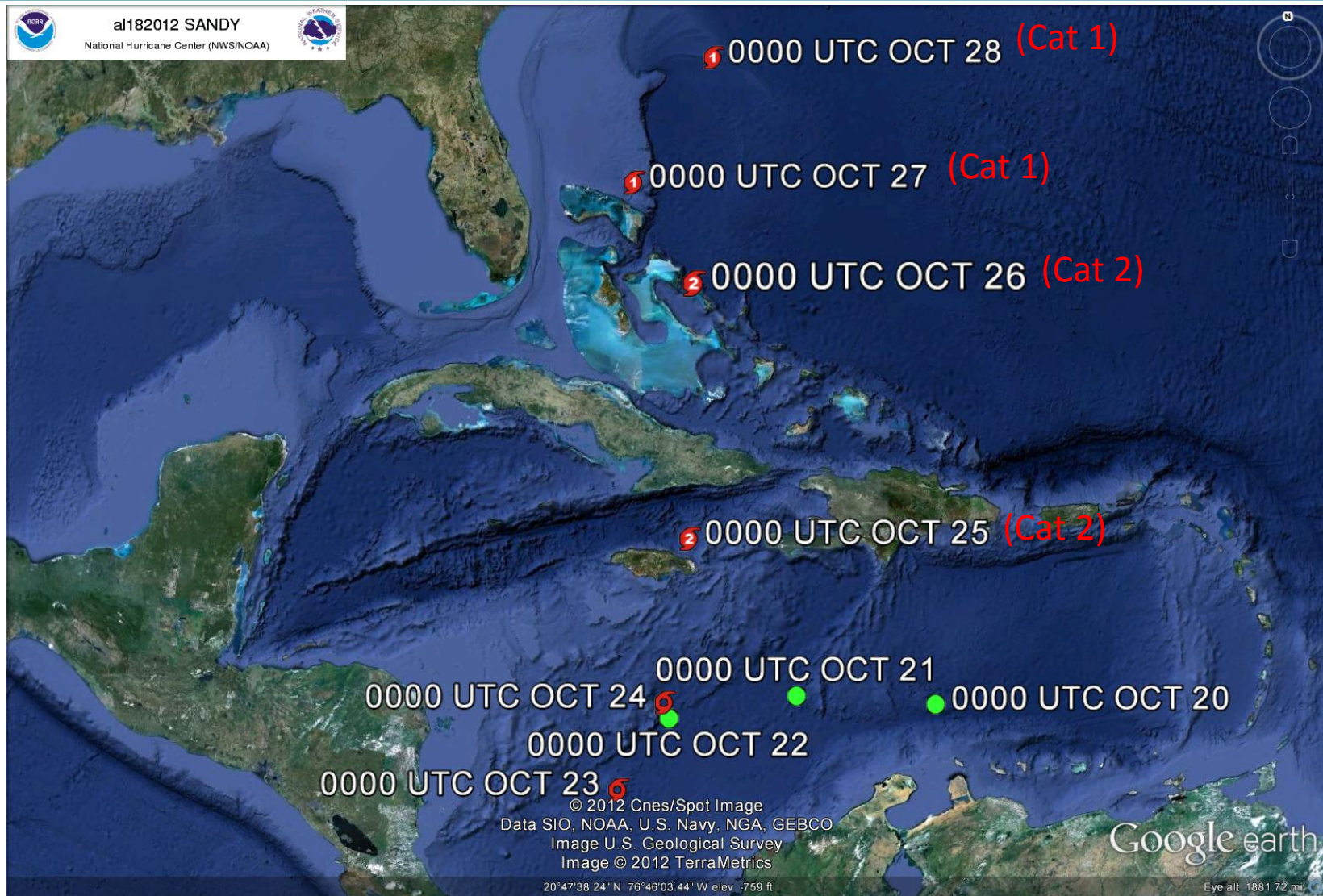


Capability for
Web Service
Plotting Via
Browser-Based
ERDDAP &
Godiva

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

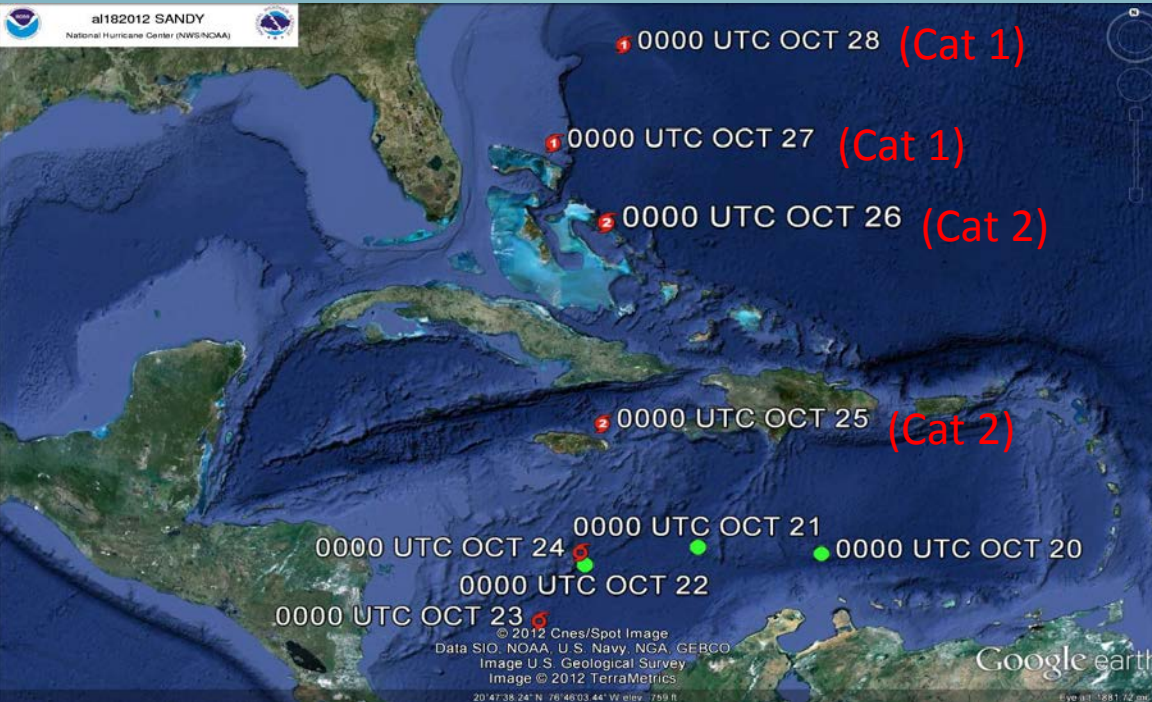
OceanNOMADS: AMSEAS Hurricane Sandy Example



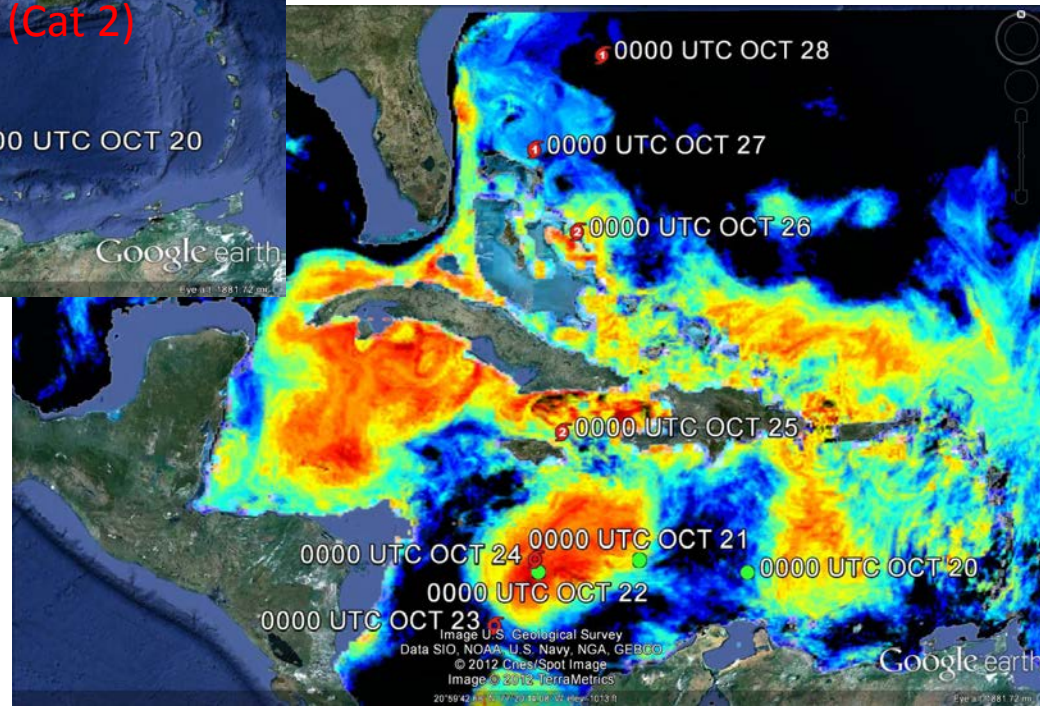
NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS: Sandy example - Where are the heat reservoirs?



Hurricane Sandy Track
20-28 October 2012
(NOAA National Hurricane Center)

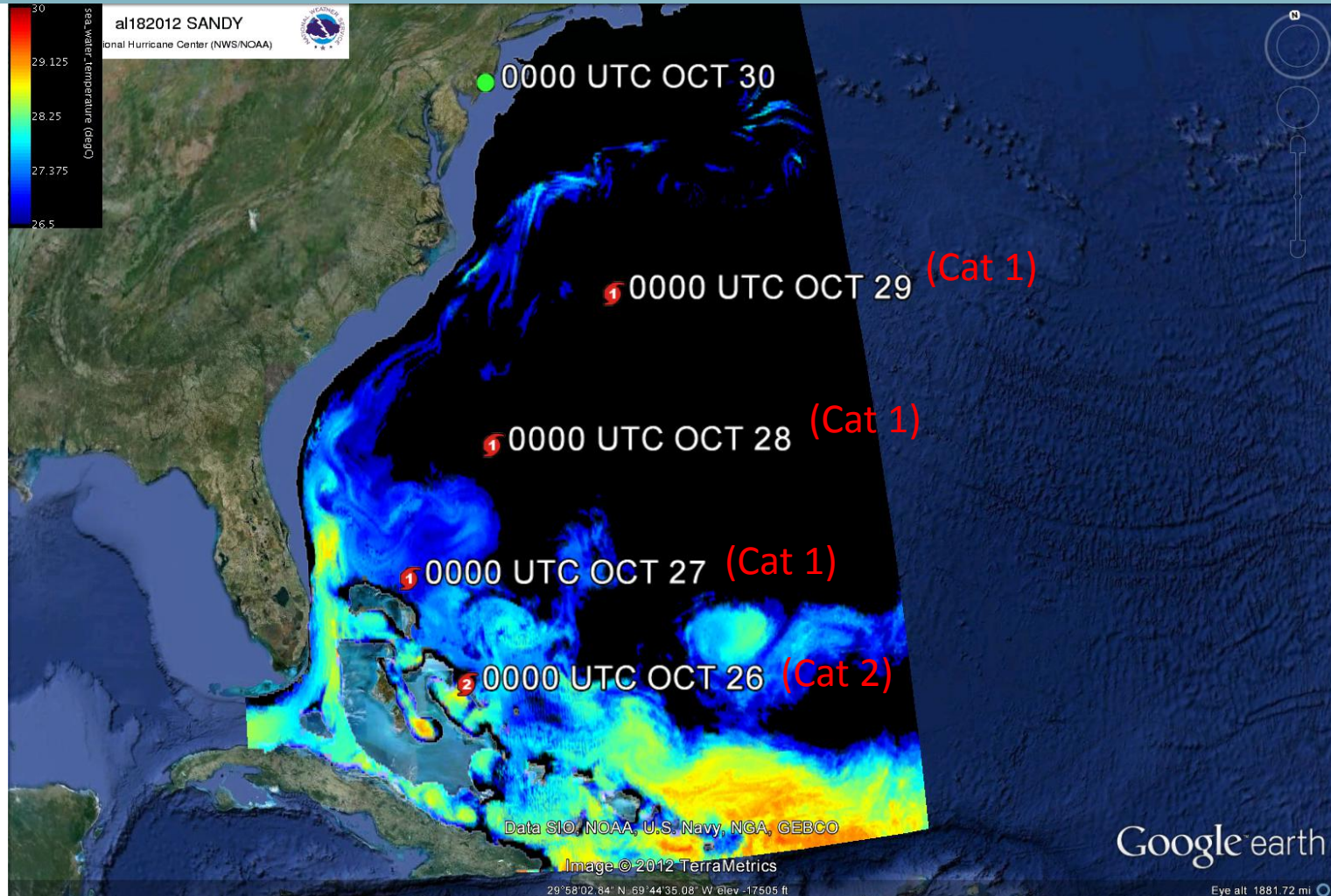


AMSEAS 50 m temp. > 26°C
on 20 October 2012

NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

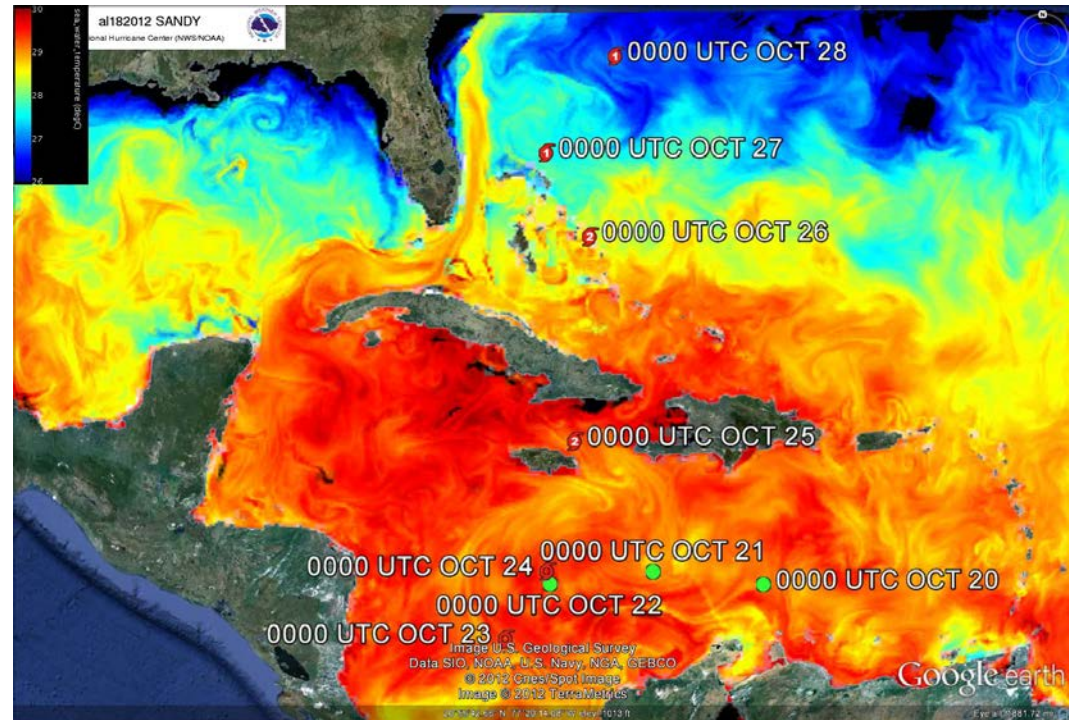
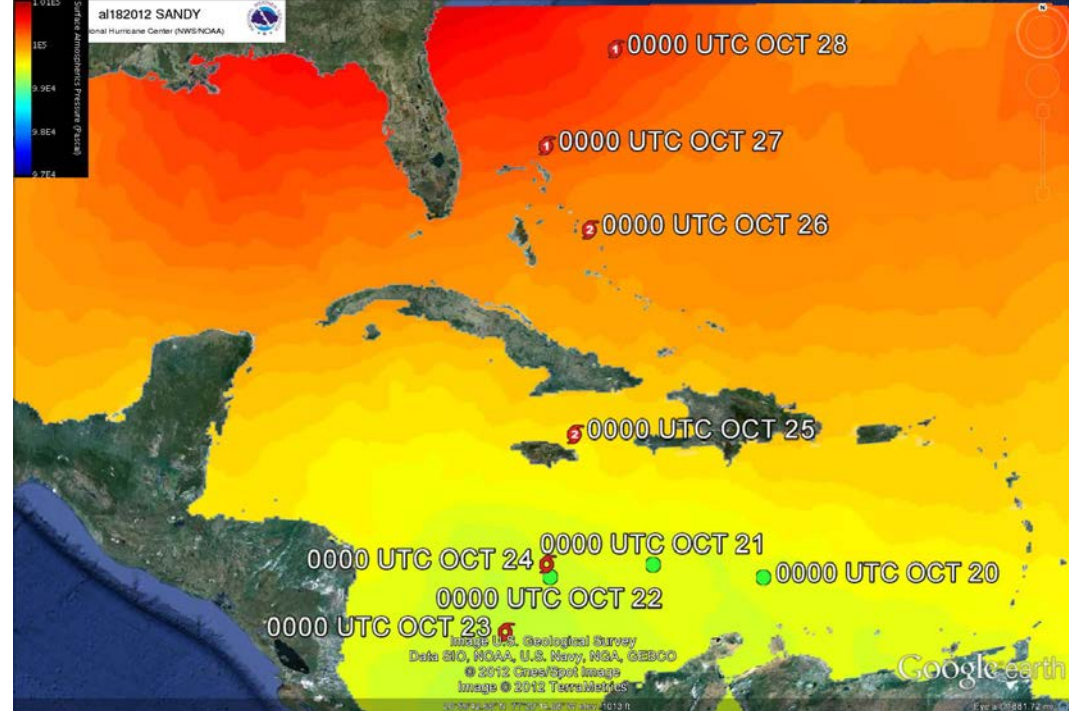
OceanNOMADS: Sandy example - Where are the heat reservoirs?



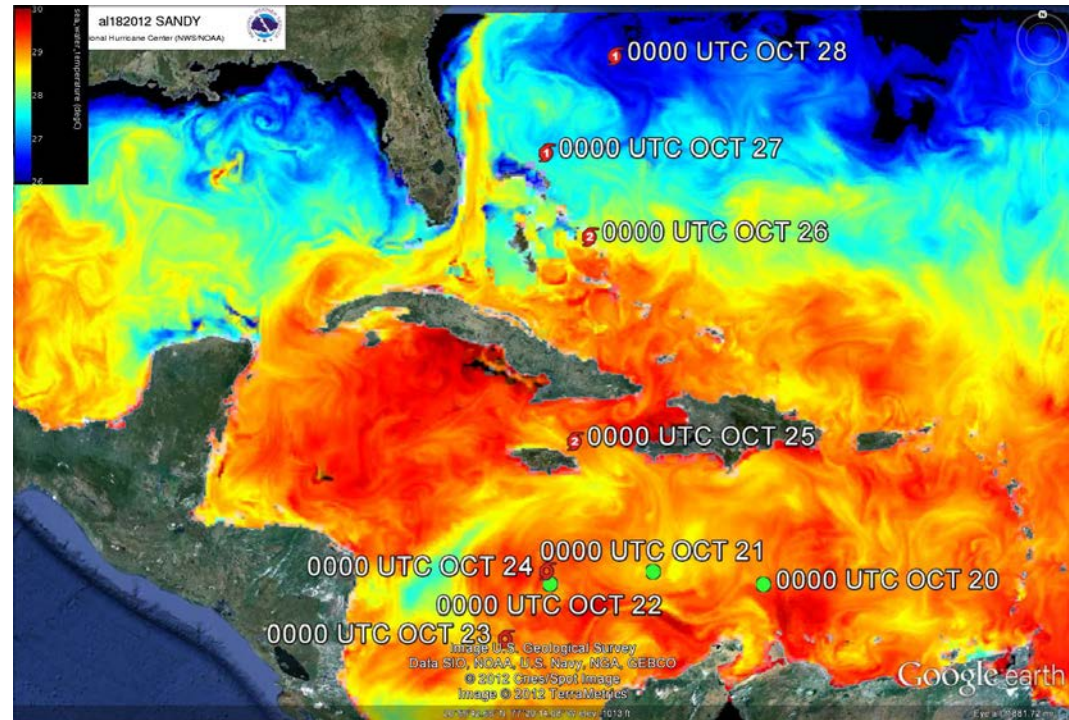
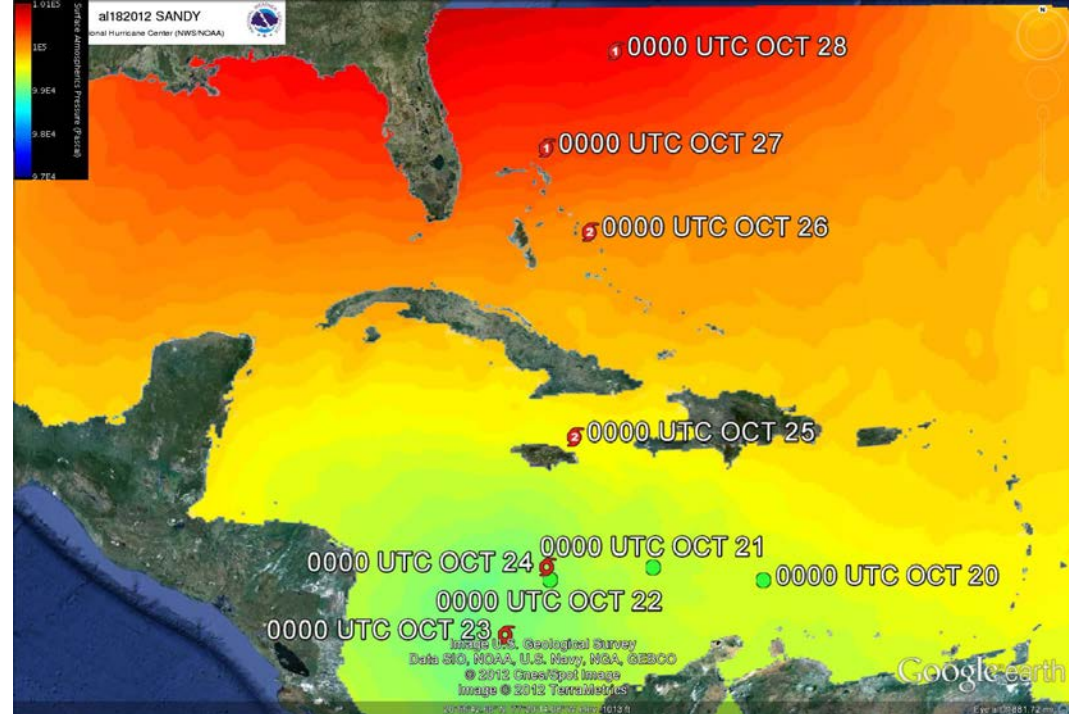
USEast Regional Model: 50 m temp. > 26°C on 26 Oct. 2012

OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
22 October 2012

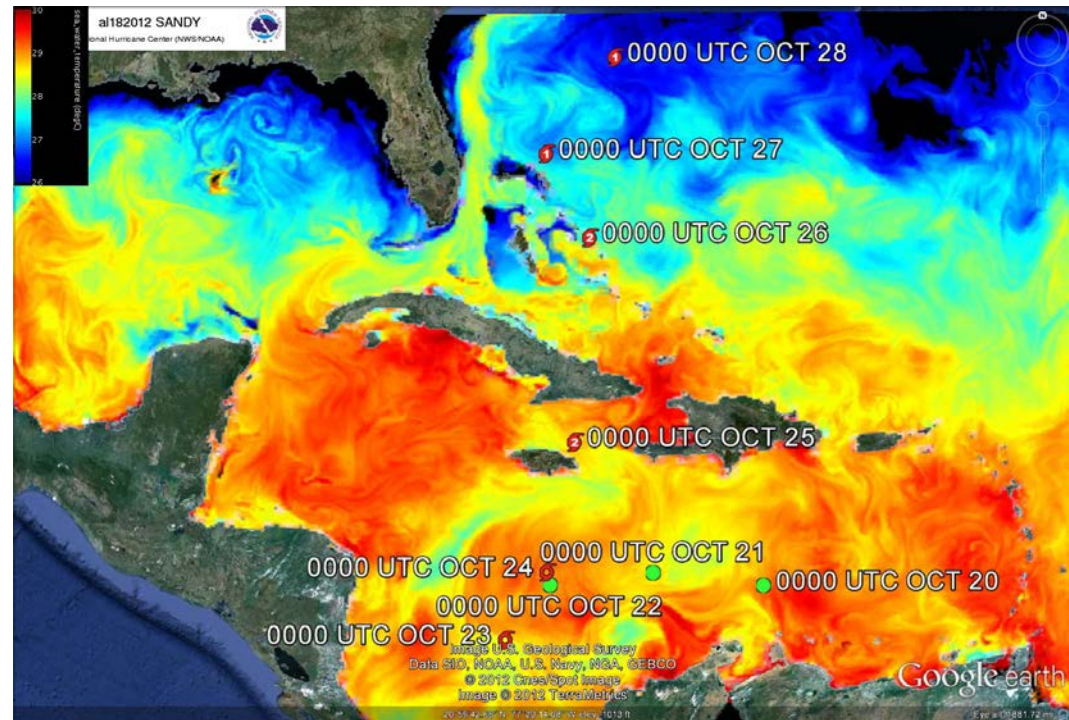
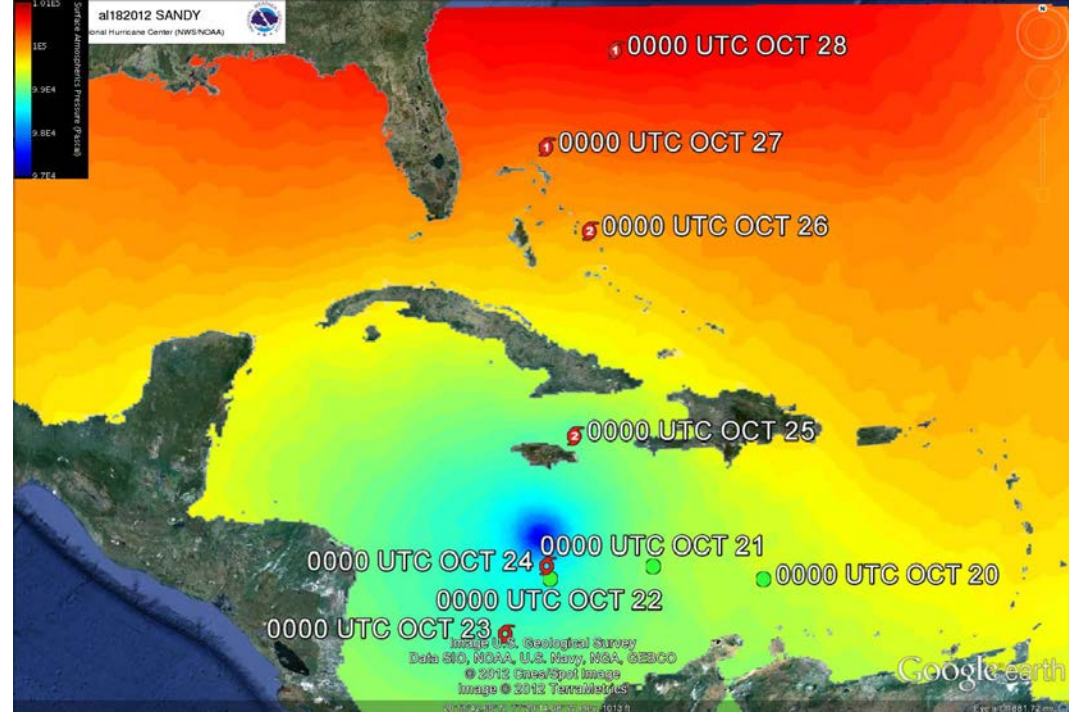
Note expected along track
cooling and recovery
in subsequent figures



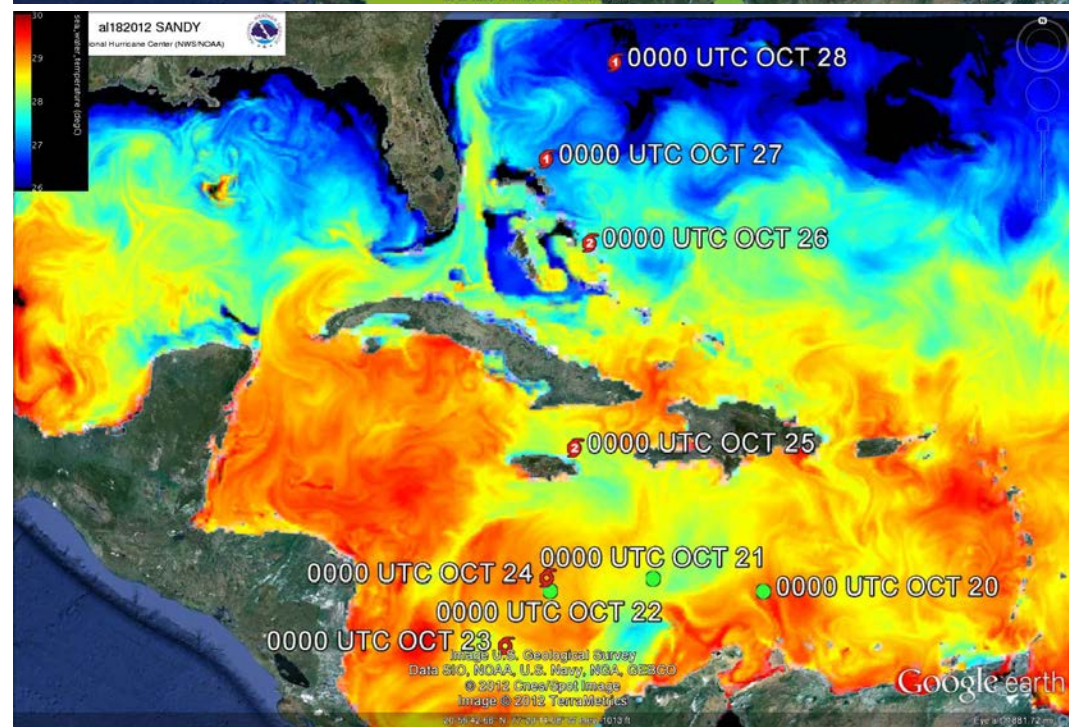
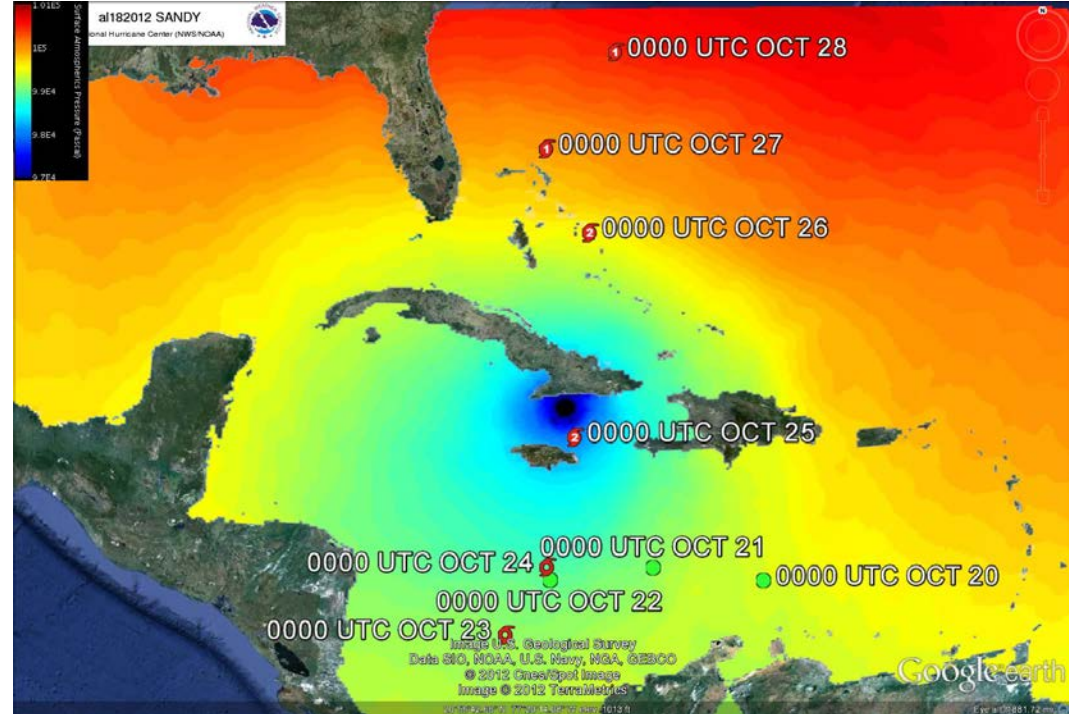
OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
23 October 2012



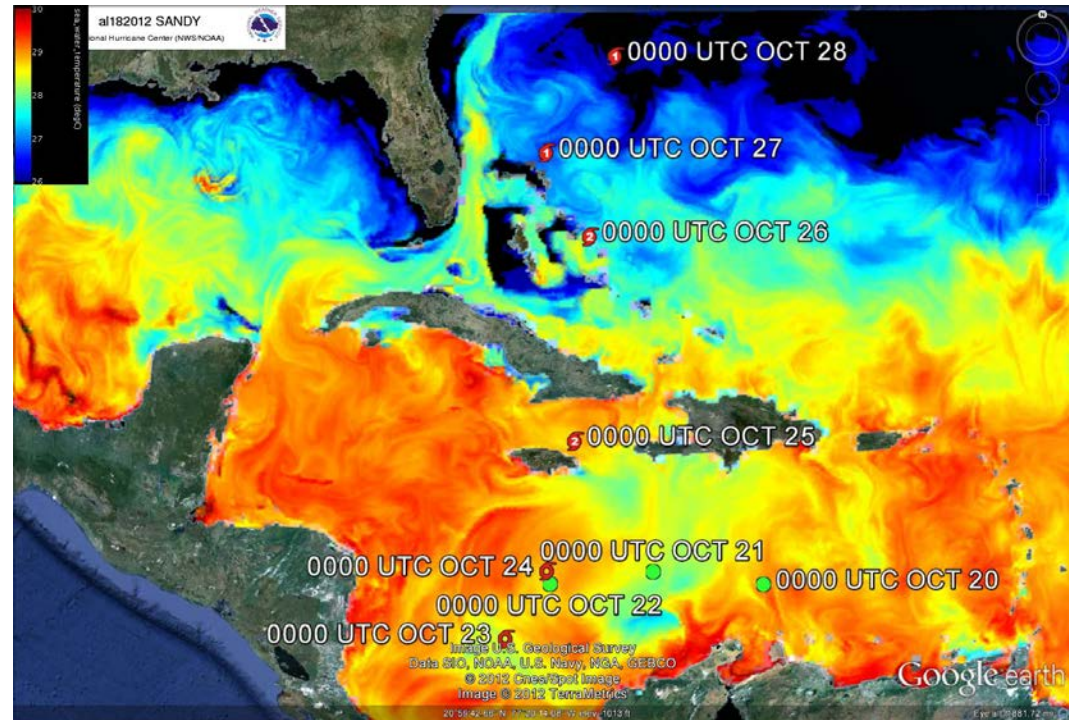
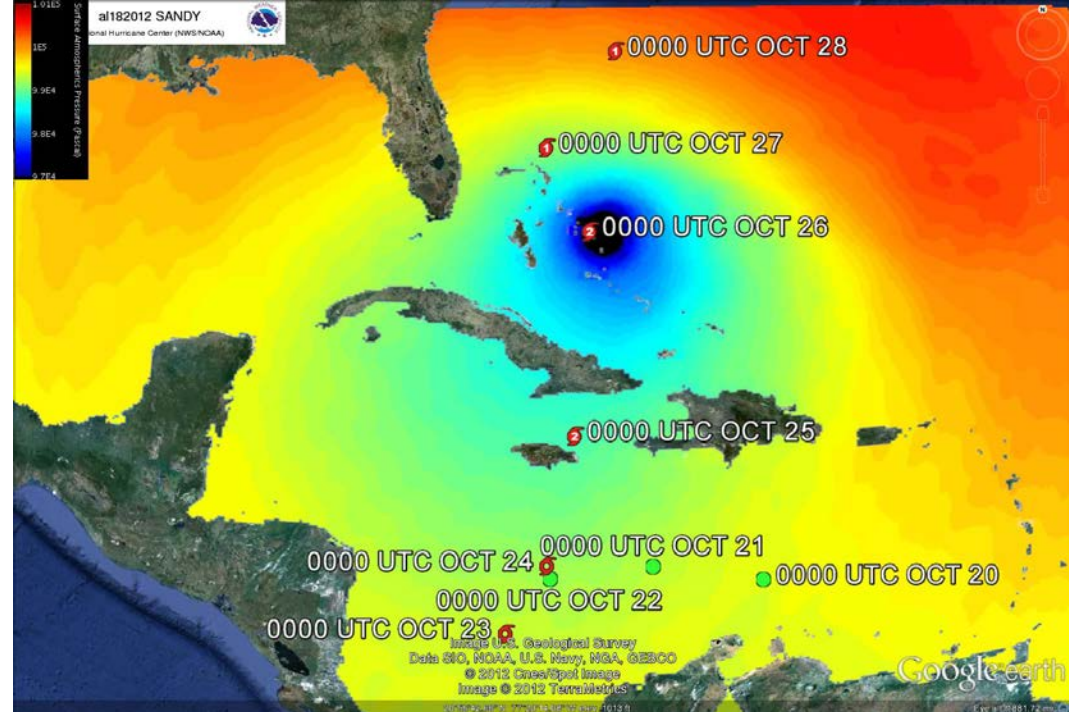
OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
24 October 2012



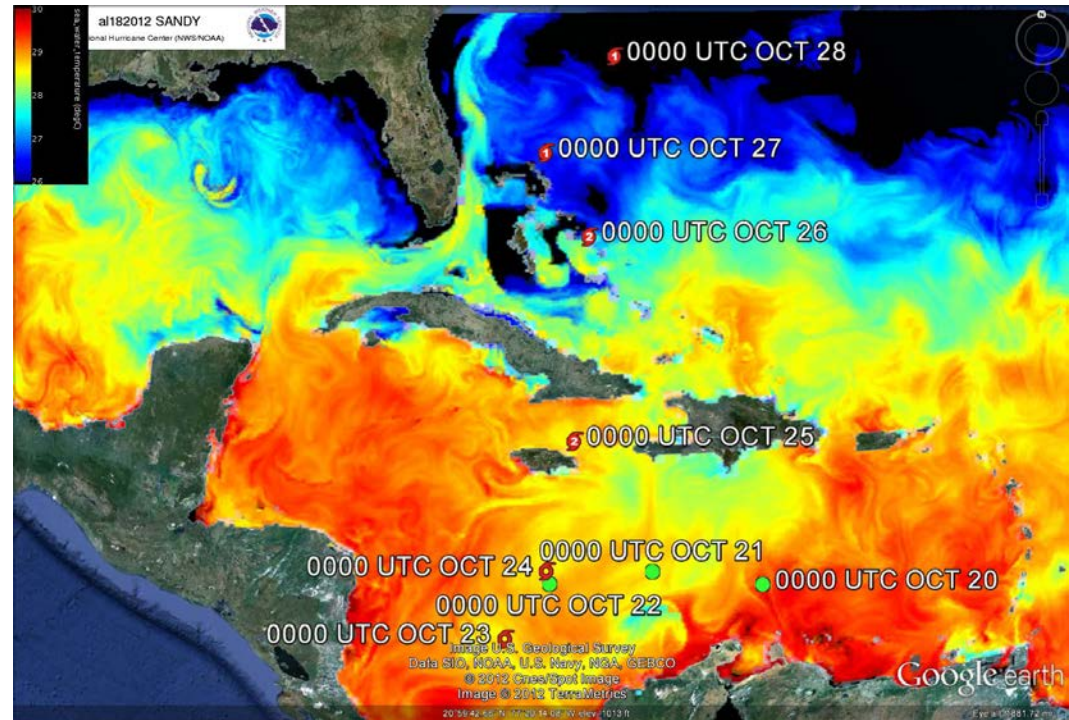
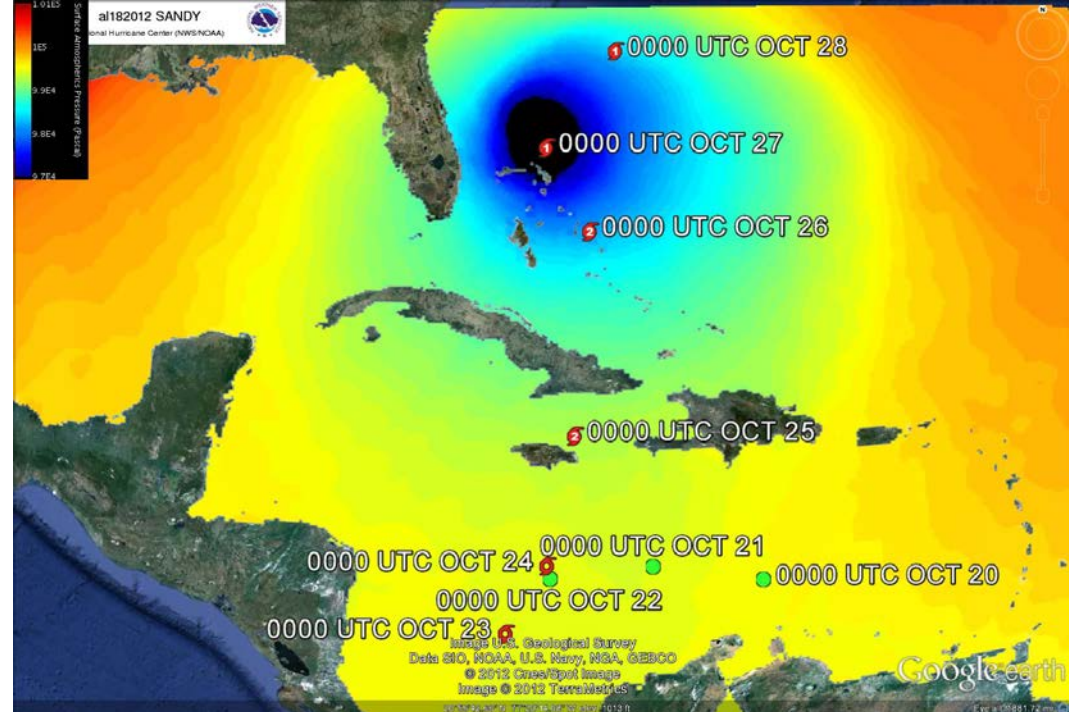
OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
25 October 2012



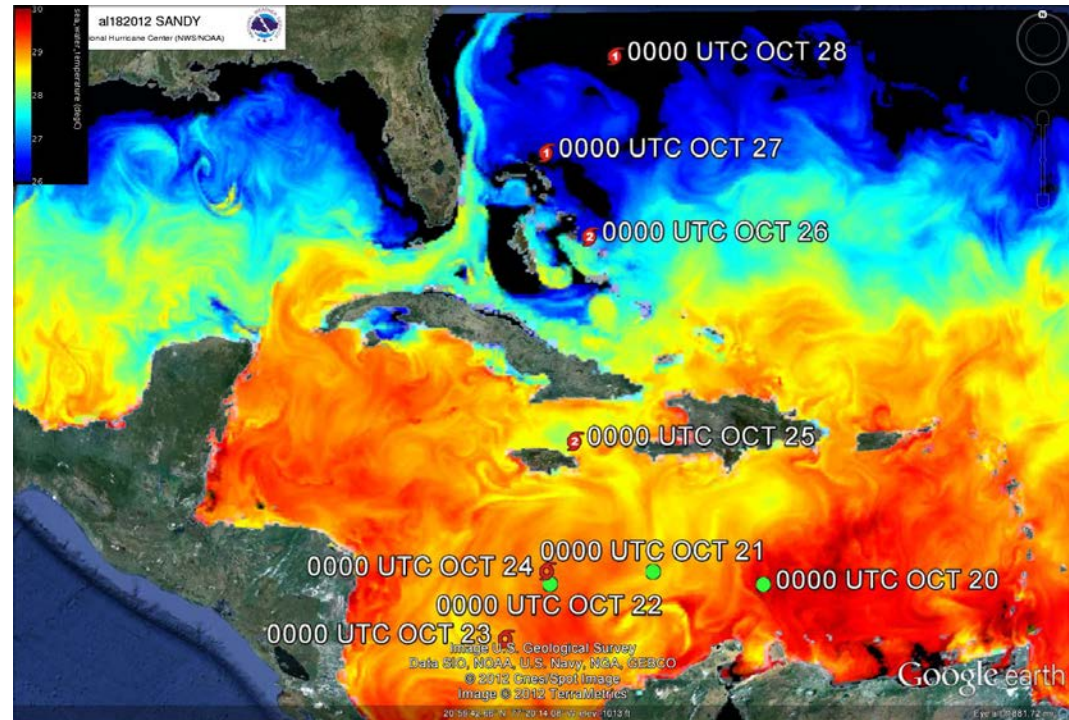
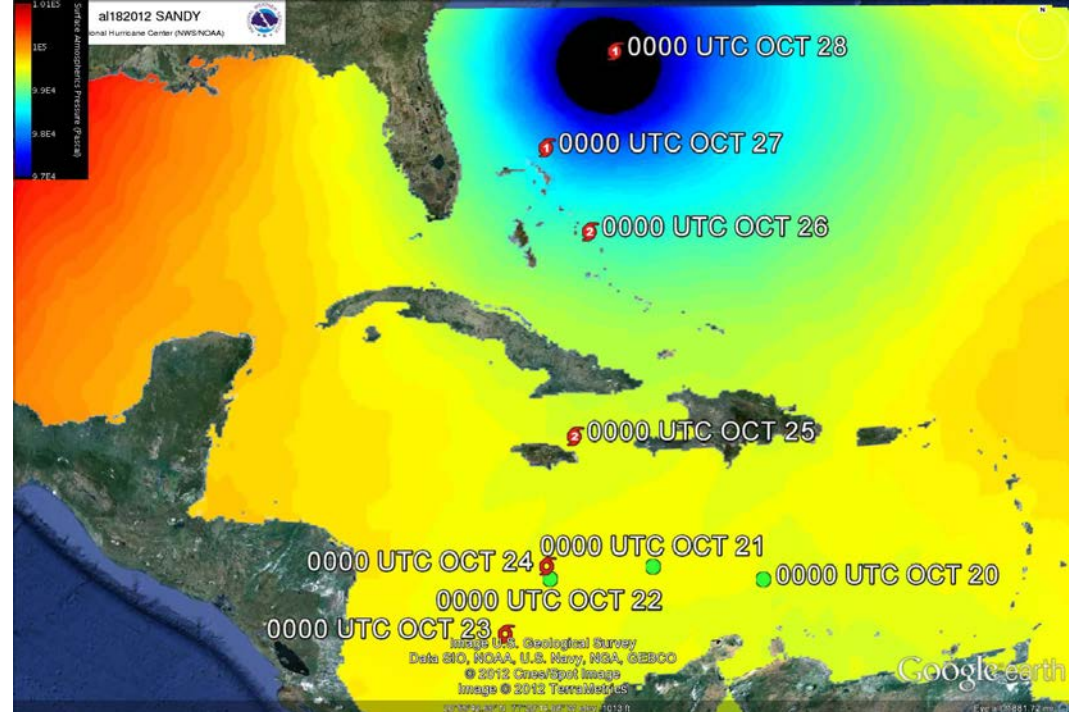
OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
26 October 2012



OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
27 October 2012



OceanNOMADS: AMSEAS
Sandy Example:
Sfc. Pressure & SST Evolution
28 October 2012



NGI, NAVO, NCEP & NODC

Improve Access to Ocean Nowcasts/ Forecasts

OceanNOMADS

Additional Information:

<http://NorthernGulfInstitute.org>

<http://www.ncddc.noaa.gov/ocean-nomads/>

www.opc.ncep.noaa.gov/newNCOM/NCOM_currents.shtml