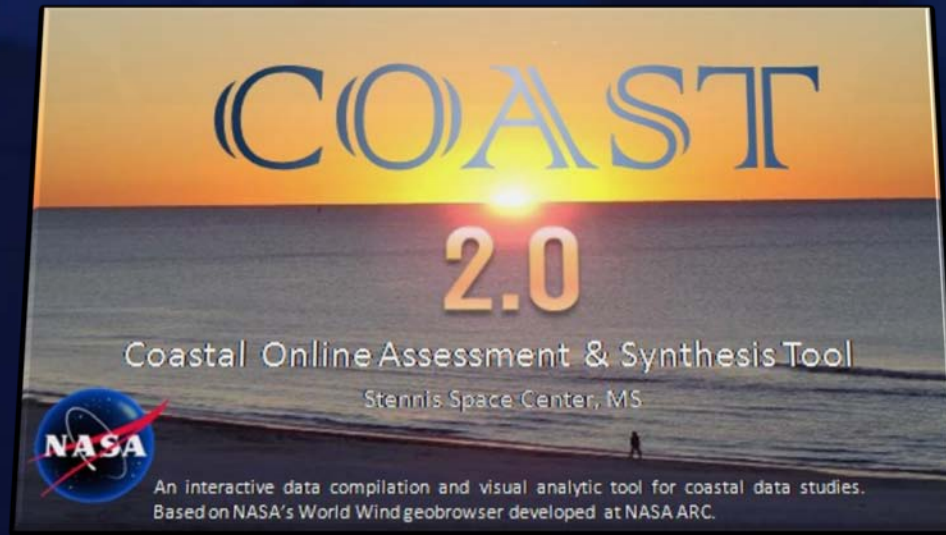


Coastal Online Analysis and Synthesis Tool 2.0



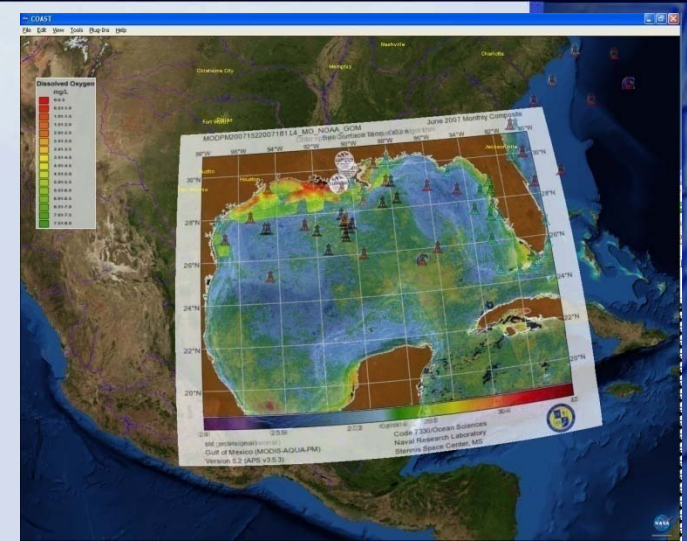
Richard B. Brown, Science Systems and Applications, Inc.

Andrew R. Navard, CSC

Beth T. Nguyen, Delta Computer Solutions, Inc.

John C. Stennis Space Center, MS 39529 USA

The Coastal Online Assessment and Synthesis Tool (COAST) 3D geobrowser has been developed to integrate disparate coastal datasets from NASA and other sources into a desktop tool that provides new data visualization and analysis capabilities for coastal researchers, managers, and residents.



- Built upon the widely used NASA-developed open source World Wind geobrowser from NASA Ames (Patrick Hogan et al.)
- .Net and C# version used for development
- Leveraged off of World Wind community shared code samples
- COAST 2.0 enhancement direction based on Coastal science community feedback and needs assessment (GOMA)

Main objective: empower user to bring more user-meaningful data into multi-layered, multi-temporal spatial context



World Wind

Active Collaboration

Department of Energy
Oak Ridge National Laboratory
Climate Change Prediction Program



U.S. Navy
Naval Air Systems Command



USDA & USGS
GeoWind



John Hopkins University
Applied Physics Lab



U.S. Army
National Simulation Center



Partners



Department of Energy
National Nuclear Security Administration
Special Technologies Lab



National Geospatial-Intelligence Agency



U.S. Army Air Traffic Control
Tactical Airspace Integration System (TAIS)



U.S. Navy Naval Research Labs
Comprehensive Maritime Awareness



UAH Satellite data analytical tools and data mining algorithms



NASA Goddard Search & Rescue Mission Office

International Users

European Space Agency



World Bank



Japan Aerospace Exploration Agency



Petróleos Mexicanos



Geoscience Australia



Coordinating with NASA Ames on WW Integration (some contributing partners soon)

Funding World Wind Development

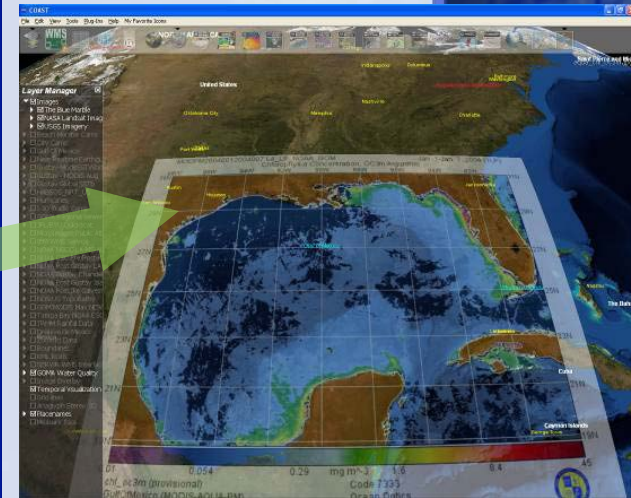
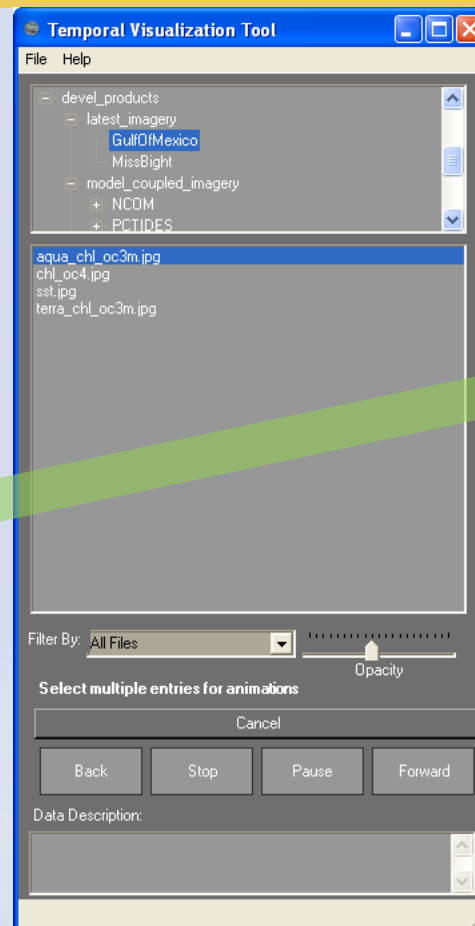
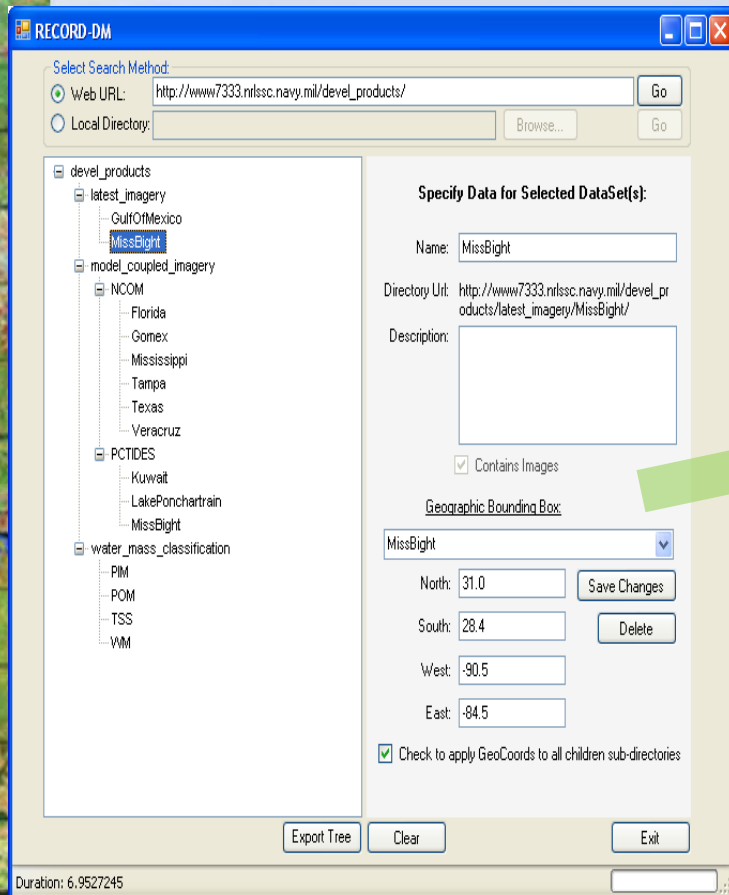
COAST 2.0: What's New in 2.0

- **Temporal Visualization Tool** enhancements for file input and animation
- **RECORD-DM** tool enhancements for local and FTP directory mapping
- **Import Data Tool**¹ – Simpler, more powerful
- **Add Points Tool**² – Import or digitize point data

¹ Modified from elements of Image Overlay plugin by Bjorn Reppen

² Modified from Favorite Icons plugin by D. Hill, C. Zimmerman, J. Zoehrer

- Added local and FTP search capability to RECORD-DM data mapping tool
- Added load local file capability to TVT
- Allows creation and sharing of TVT temporal image playback files



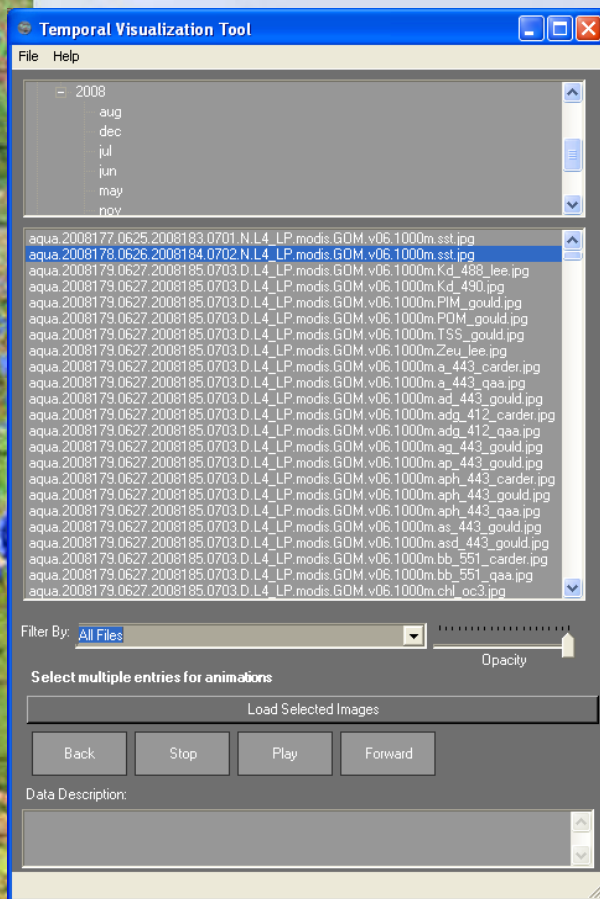
COAST 2.0: RECORD-DM Tool and TVT



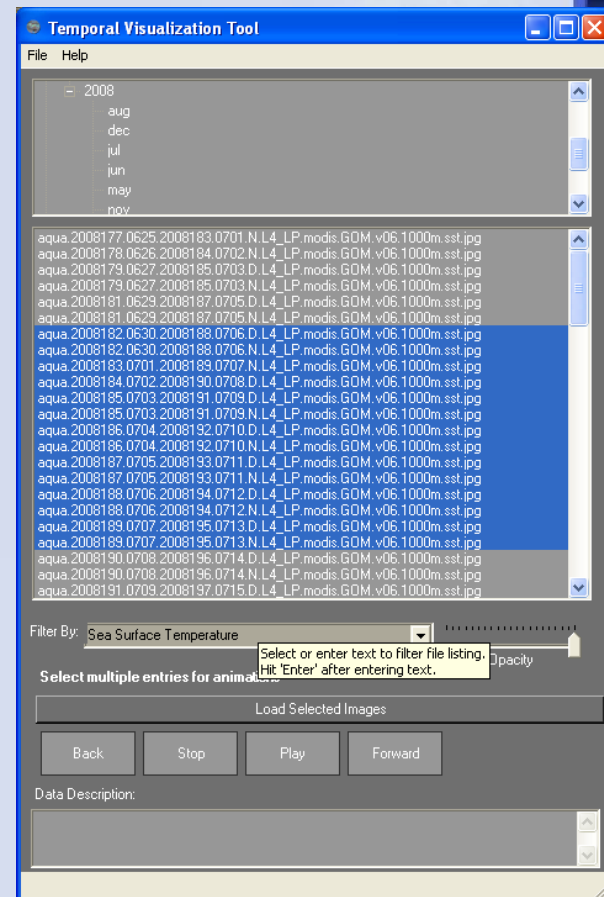
National Aeronautics and Space Administration

Recursive Online Remote Directory-Data Mapper / Temporal Visualization Tool

- Added local and FTP search capability to RECORD-DM data mapping tool
- Added load local file capability to TVT
- Allows creation and sharing of TVT temporal image playback files



- Directory tree listing for selection
- “Filter by” common coastal science data types
- VCR-style controls for freeze frame review
- Current frame file name listed at top of screen
- Load other directory tree definition files through file menu
- User allowed to multi-select and sequential animate



COAST 2.0: RECORD-DM Tool and TVT



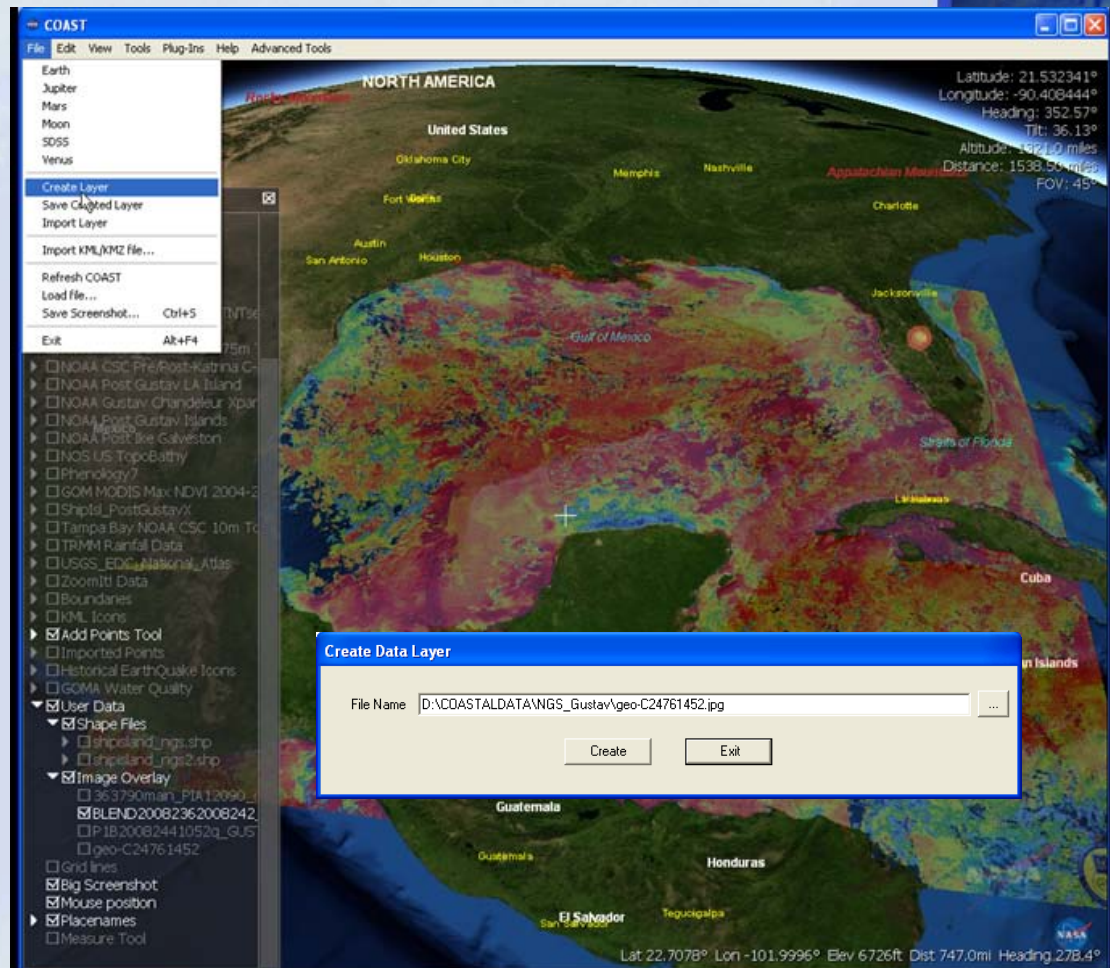
National Aeronautics and Space Administration

Recursive Online Remote Directory-Data Mapper/Temporal Visualization Tool



Import Data Tool: Interface Integration

- Combining some elements of previous Image Overlay¹, Shapefile Import², and Layer save/creation³ plugins
- Will allow users more simplified ability for localized/personalized data integration and sharing
- Capability to import TIF, PNG, JPG, GIF with or without world file
- Rubber sheet placement of non-georeferenced imagery enabled



¹ Original contributed by Bjorn Reppen, included in WW 1.4; ² limited use in WW 1.4 ; ³ inspired by Johann Zoehrer

Layer Manager

- ▶ ☐ Hurricanes
- ▶ ☐ I-10 Traffic Cams
- ▶ ☐ GOMA Regional Viewers
- ▶ ☐ JPL/BUY Quikscat
- ▶ ☐ MCD45
- ▶ ☐ MicroImages Public Atlas
- ▶ ☐ The COMS Service
- ▶ ☐ NOAA NGDC LA-MS-AL
- ▶ ☐ NOAA CSC Pre/Post-Ka
- ▶ ☐ NOAA Post Gustav LA Is
- ▶ ☐ NOAA Gustav Chande
- ▶ ☐ NOAA Post Gustav Islar
- ▶ ☐ NOAA Post Ike Galvesto
- ▶ ☐ NOS US TopoBathy
- ▶ ☐ NV Multi Spec
- ▶ ☐ NVmulti_half
- ▶ ☐ Phenology7
- ▶ ☐ GOM MODIS Max NDVI
- ▶ ☐ ShipIsl_PostGustavX
- ▶ ☐ Tampa Bay NOAA CSC
- ▶ ☐ TRMM Rainfall Data
- ▶ ☐ Hypoxia
- ▶ ☐ ZoomIt! Data
- ▶ ☐ Boundaries
- ▶ ☐ KML Icons
- ▶ ☐ Whiteboard
- ▶ ☐ Add Points Tool
- ▶ ☐ Imported Points
- ▶ ☒ User Data
 - ☐ Grid Lines
 - ☐ Measure Tool
 - ☐ Measure Area
 - ☐ Anaglyph Stereo 3D
 - ☒ Mouse position
 - ☒ Placenames

NORTH AMERICA

Gulf of Mexico

Mexico

Cayman Islands

Belize

Guatemala

Honduras

El Salvador

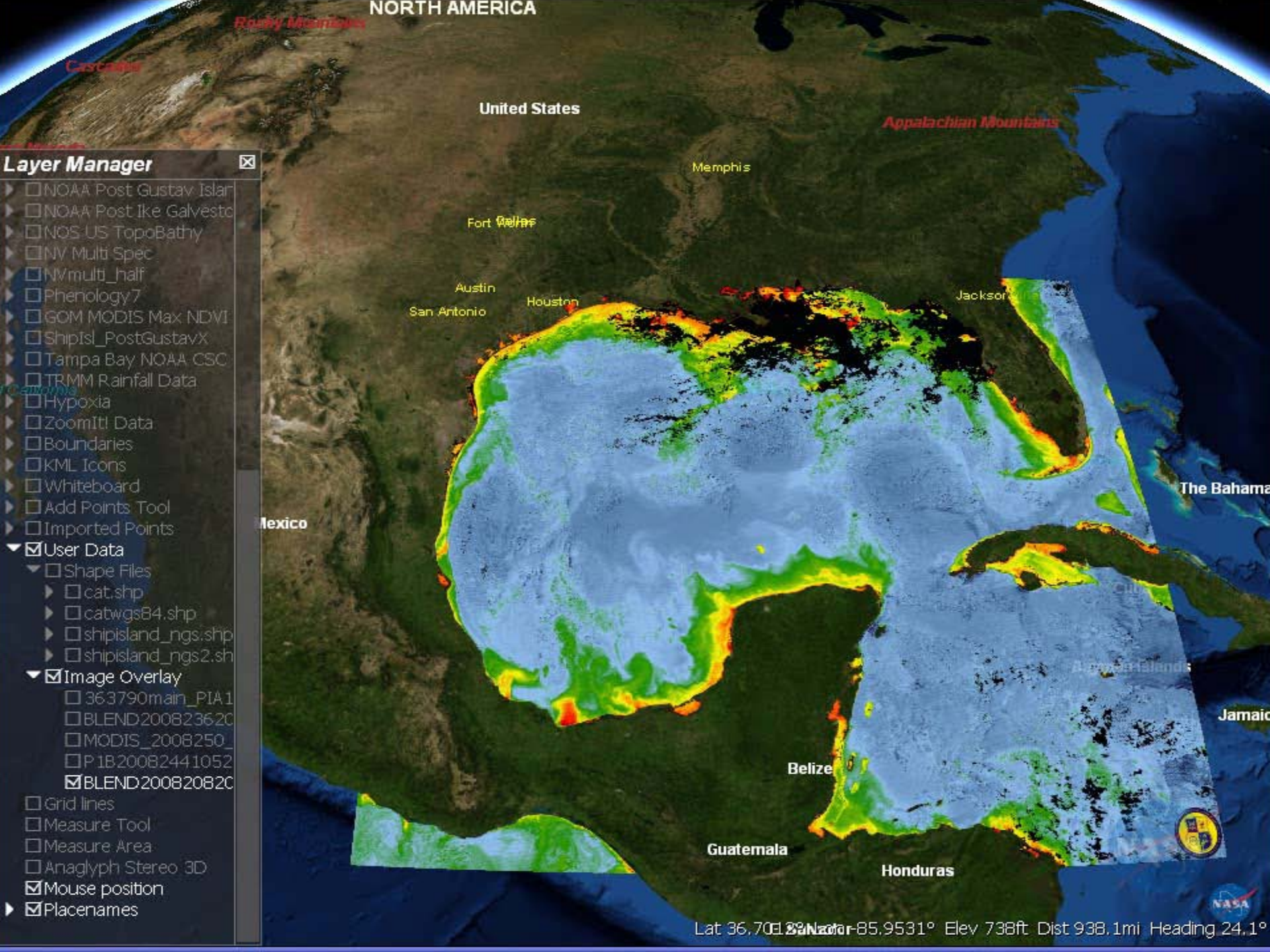
Nicaragua

Costa Rica

NASA

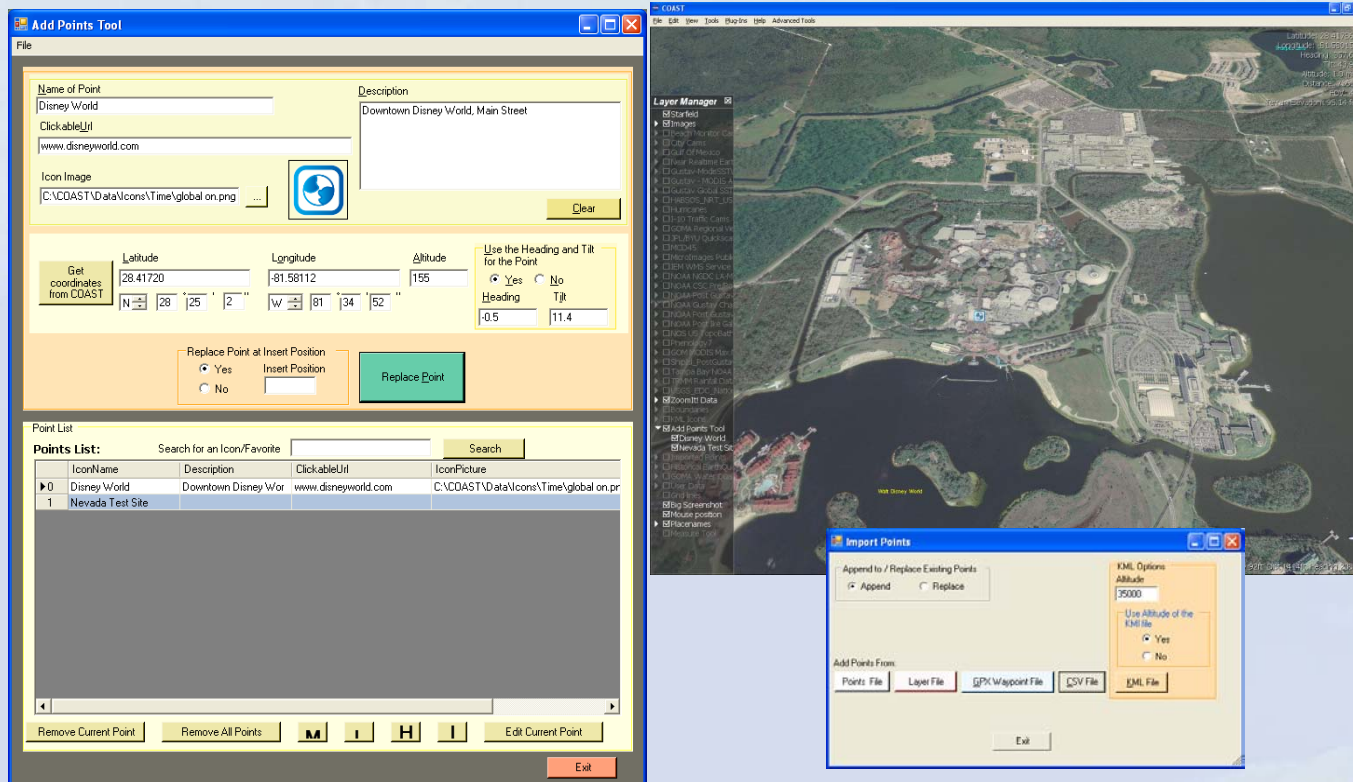


Lat 22.3297° Lon -101.2217° Elev 6583ft Dist 539.1mi Heading 239.6°



Layer Manager

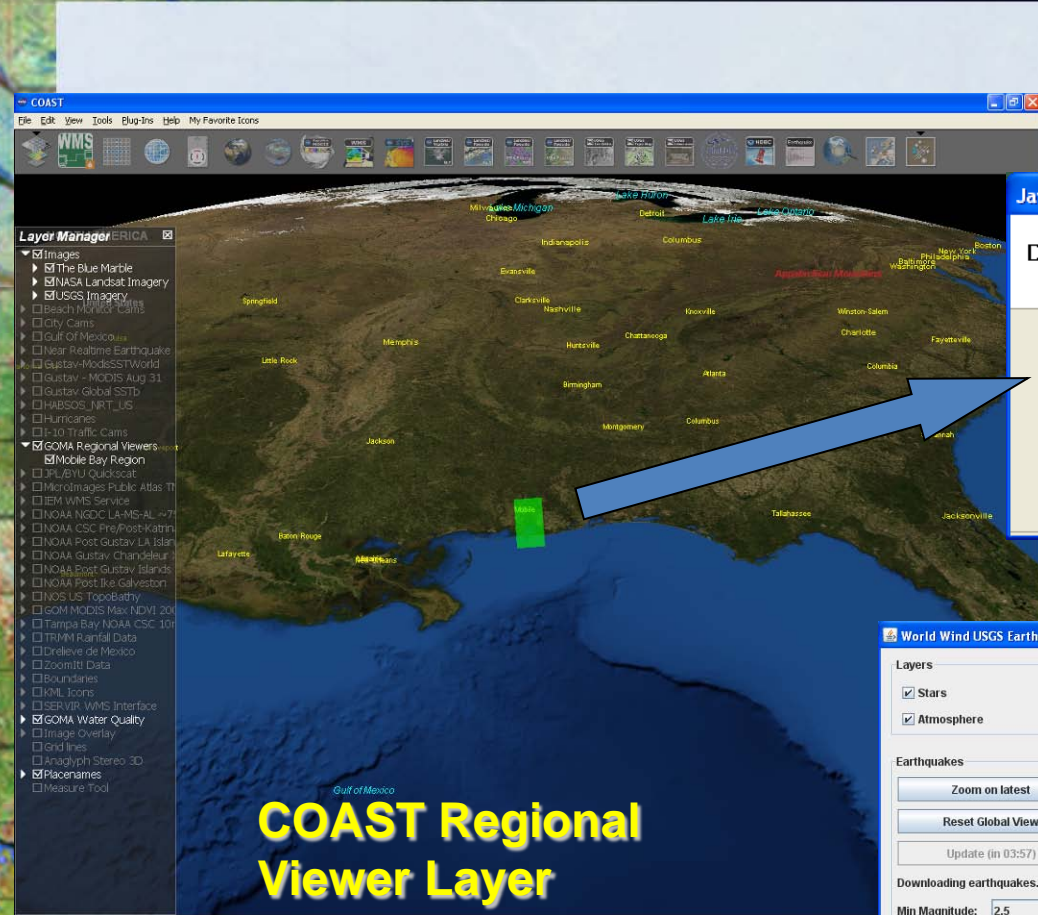
- ☐ NOAA Post Gustav Islar
- ☐ NOAA Post Ike Galvesto
- ☐ NOS-US TopoBathy
- ☐ NV Multi Spec
- ☐ NVmult_half
- ☐ Phenology7
- ☐ GOM MODIS Max NDVI
- ☐ ShipIsl_PostGustavX
- ☐ Tampa Bay NOAA CSC
- ☐ TRMM Rainfall Data
- ☐ Hypoxia
- ☐ ZoomIt! Data
- ☐ Boundaries
- ☐ KML Icons
- ☐ Whiteboard
- ☐ Add Points Tool
- ☐ Imported Points
- ☒ User Data
 - ☐ Shape Files
 - ☐ cat.shp
 - ☐ catwgs84.shp
 - ☐ shipisland_ngo.shp
 - ☐ shipisland_ngo2.shp
- ☒ Image Overlay
 - ☐ 36.3790main_PIA1
 - ☐ BLEND200823620
 - ☐ MODIS_2008250_
 - ☐ P1B20082441052
 - ☒ BLEND200820820
- ☐ Grid lines
- ☐ Measure Tool
- ☐ Measure Area
- ☐ Anaglyph Stereo 3D
- ☒ Mouse position
- ☒ Placenames



- User has the capability to directly digitize points onto the COAST interface, to add metadata and links directly, and to save the added points out to several shareable formats for use by others
- Users also have the option of typing in Web link addresses and location descriptions, and of selecting a custom icon to be used as a marker
- Points can also be edited and replaced as needed
- Points in TXT, CSV, COAST XML layer, or GPX format can also be added by an Import Points function located under the File menu
- Point set may be saved as a point TXT, CSV, or PRN file, or as a COAST-compatible XML layer

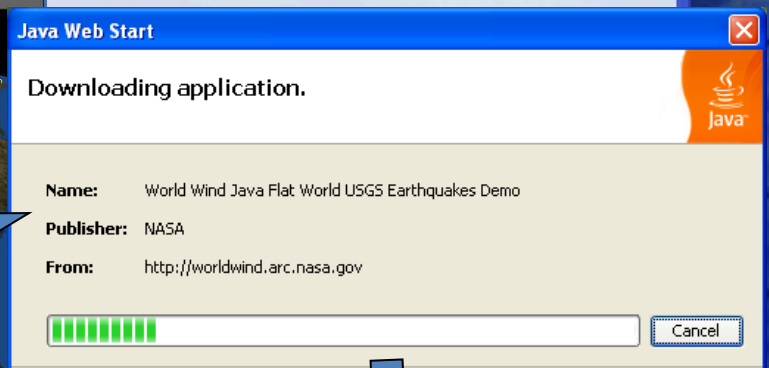






COAST Regional Viewer Layer

Integrated Regional Java Browser (prototype example)



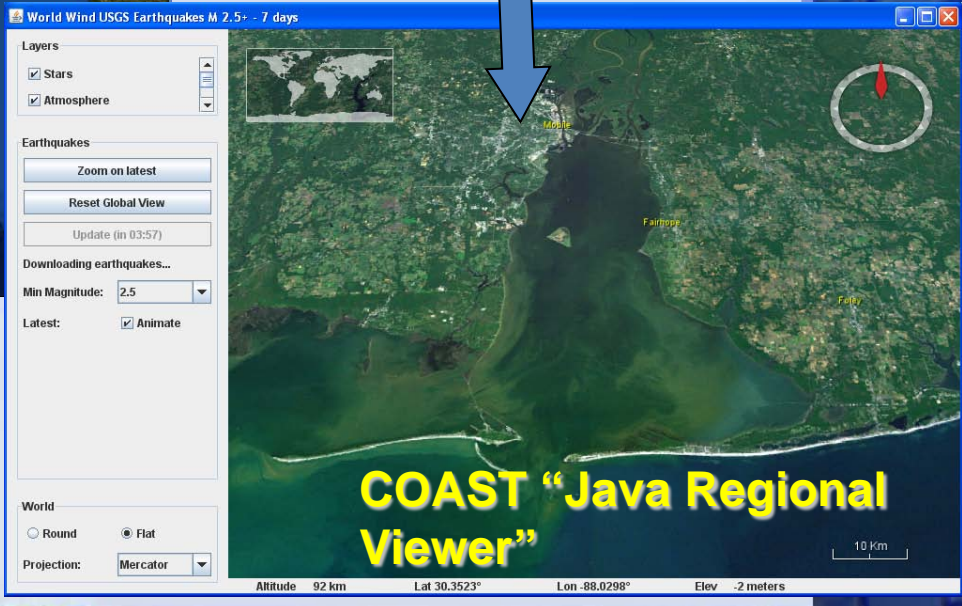
Java Web Start

Downloading application.

Name: World Wind Java Flat World USGS Earthquakes Demo

Publisher: NASA

From: <http://worldwind.arc.nasa.gov>



World Wind USGS Earthquakes M 2.5+ ~ 7 days

Layers

- ☒ Stars
- ☒ Atmosphere

Earthquakes

Zoom on latest

Reset Global View

Update (in 03:57)

Downloading earthquakes...

Min Magnitude: 2.5

Latest: ☒ Animate

World

☐ Round ☒ Flat

Projection: Mercator

COAST "Java Regional Viewer"

Altitude 92 km Lat 30.3523° Lon -88.0298° Elev -2 meters



COAST

2.0

Questions?