https://ntrs.nasa.gov/search.jsp?R=20100021232 2019-08-30T09:44:34+00:00Z

National Aeronautics and Space Administration

Coastal Online Analysis and Synthesis Tool 2.0

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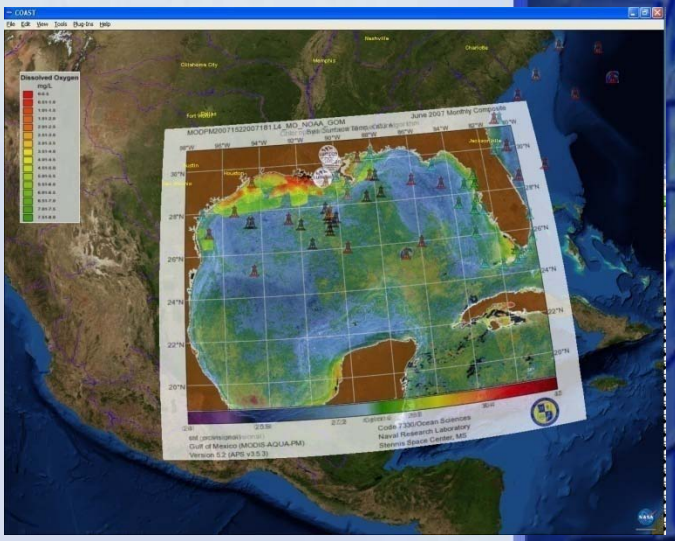
COAST 2.0: Power to the User

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

International Users

European Space Agency

World Bank

Japan Aerospace Exploration Agency

Petróleos Mexicanos

Geoscience Australia

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

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

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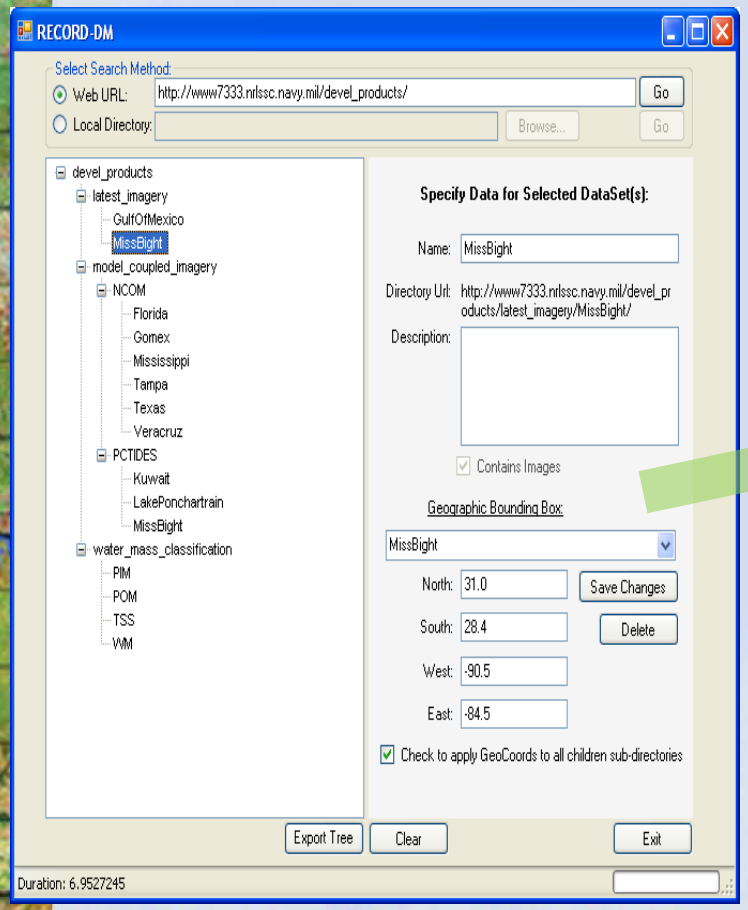
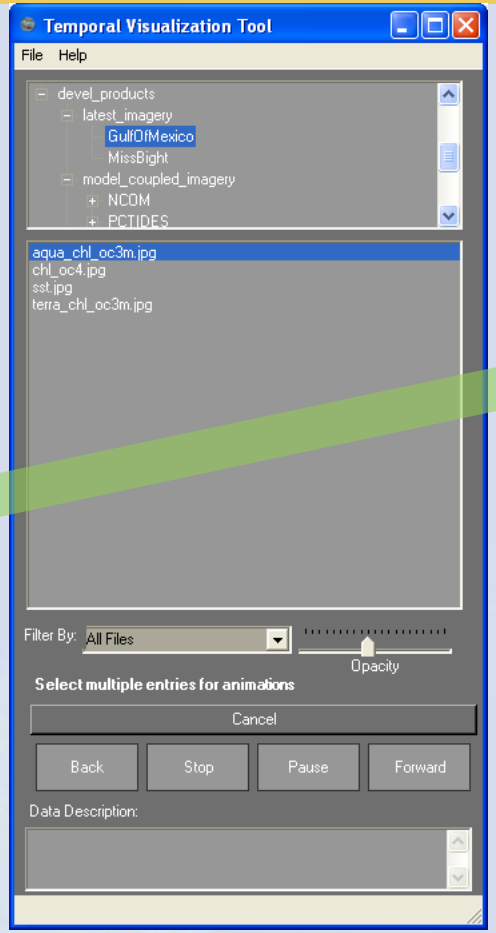
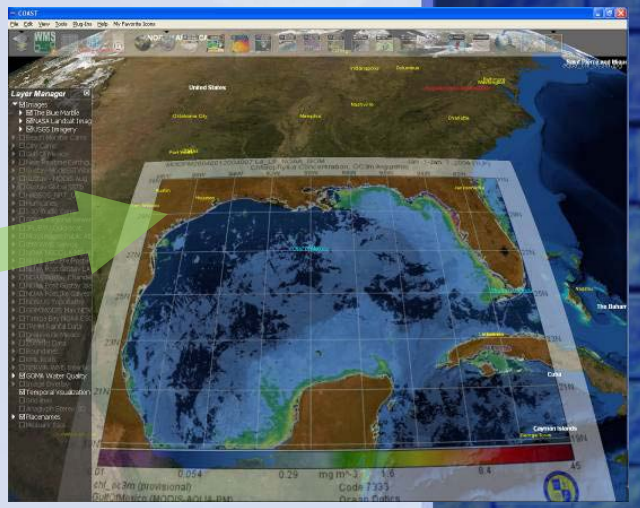
COAST 2.0: RECORD-DM Tool and TVT

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







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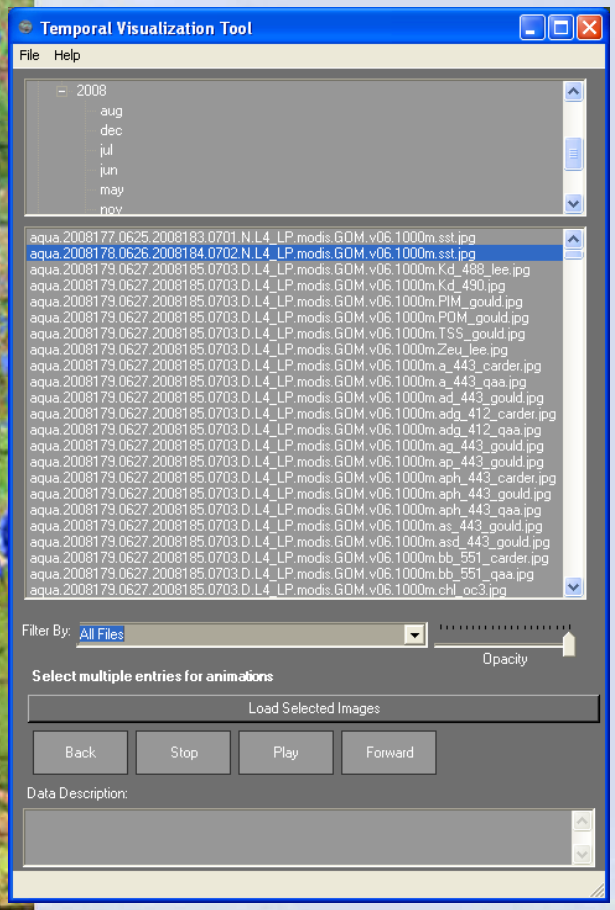
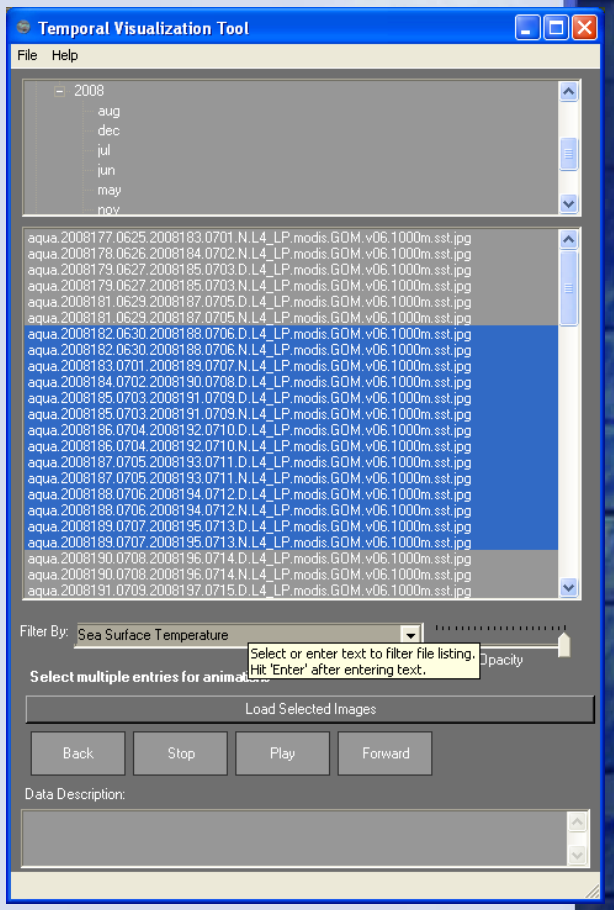


- Directory tree listing for selection
- "Filter by" common coastal science data types
- VCR-style controls for freeze frame review
- Current frame file name listed at top of screen
- Load other directory tree definition files through file menu
- User allowed to multi-select and sequential animate



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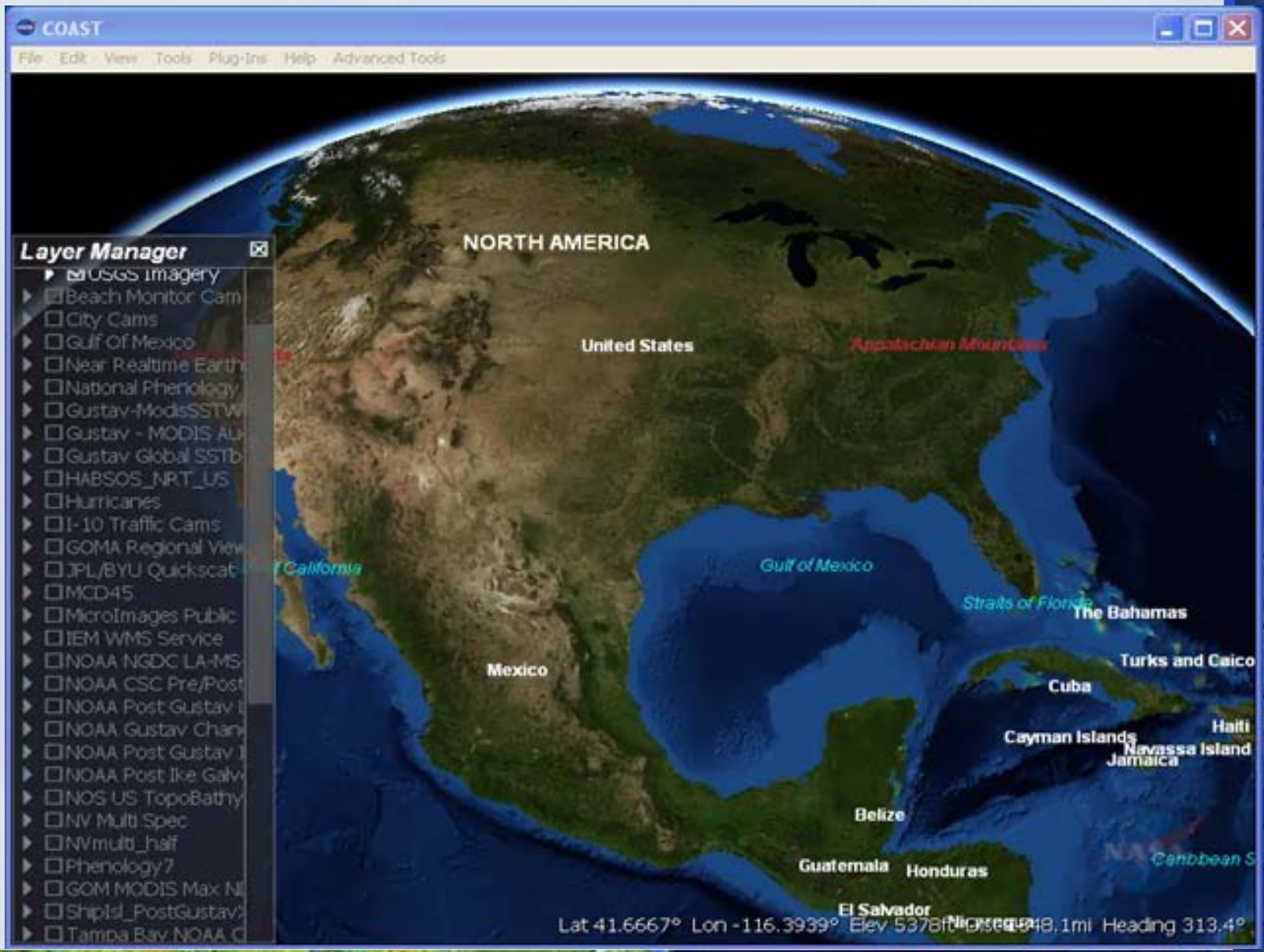
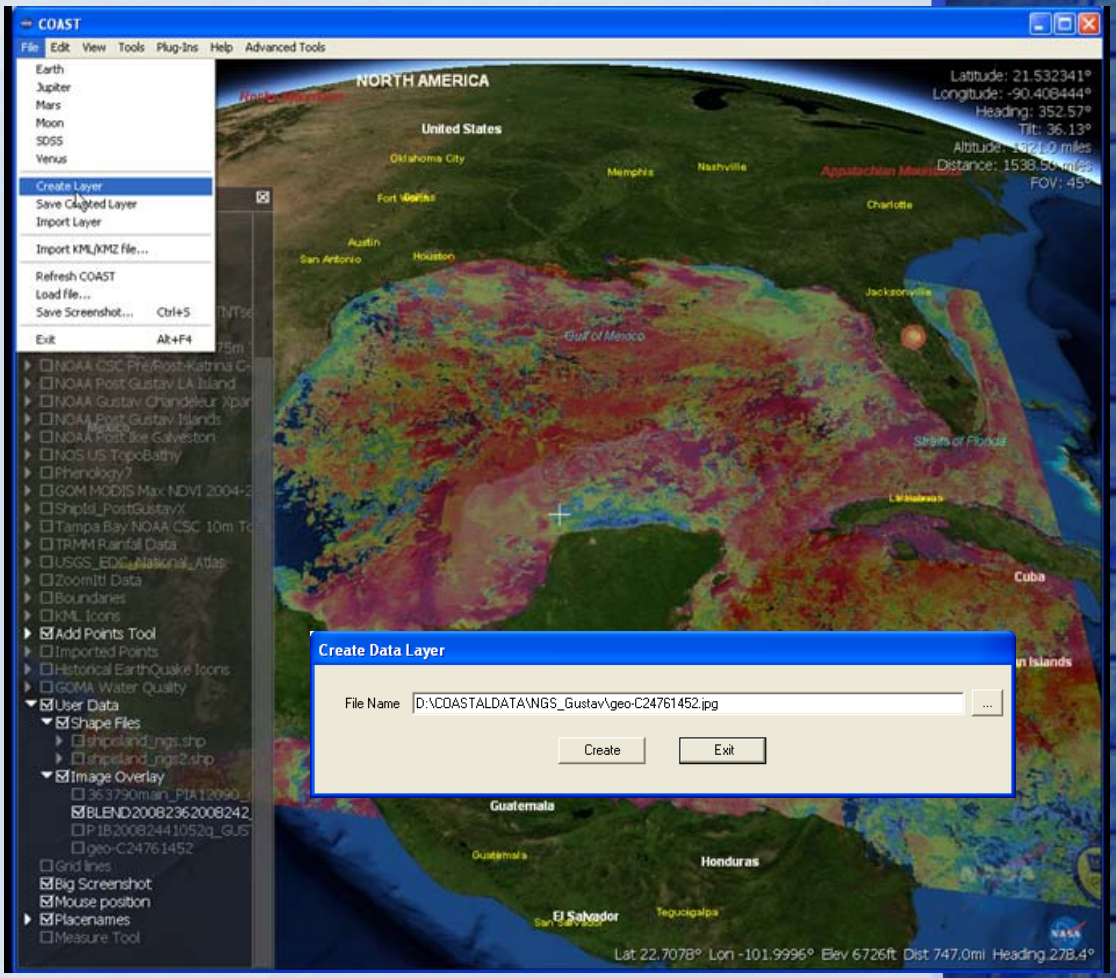


COAST 2.0: Import Data Tool

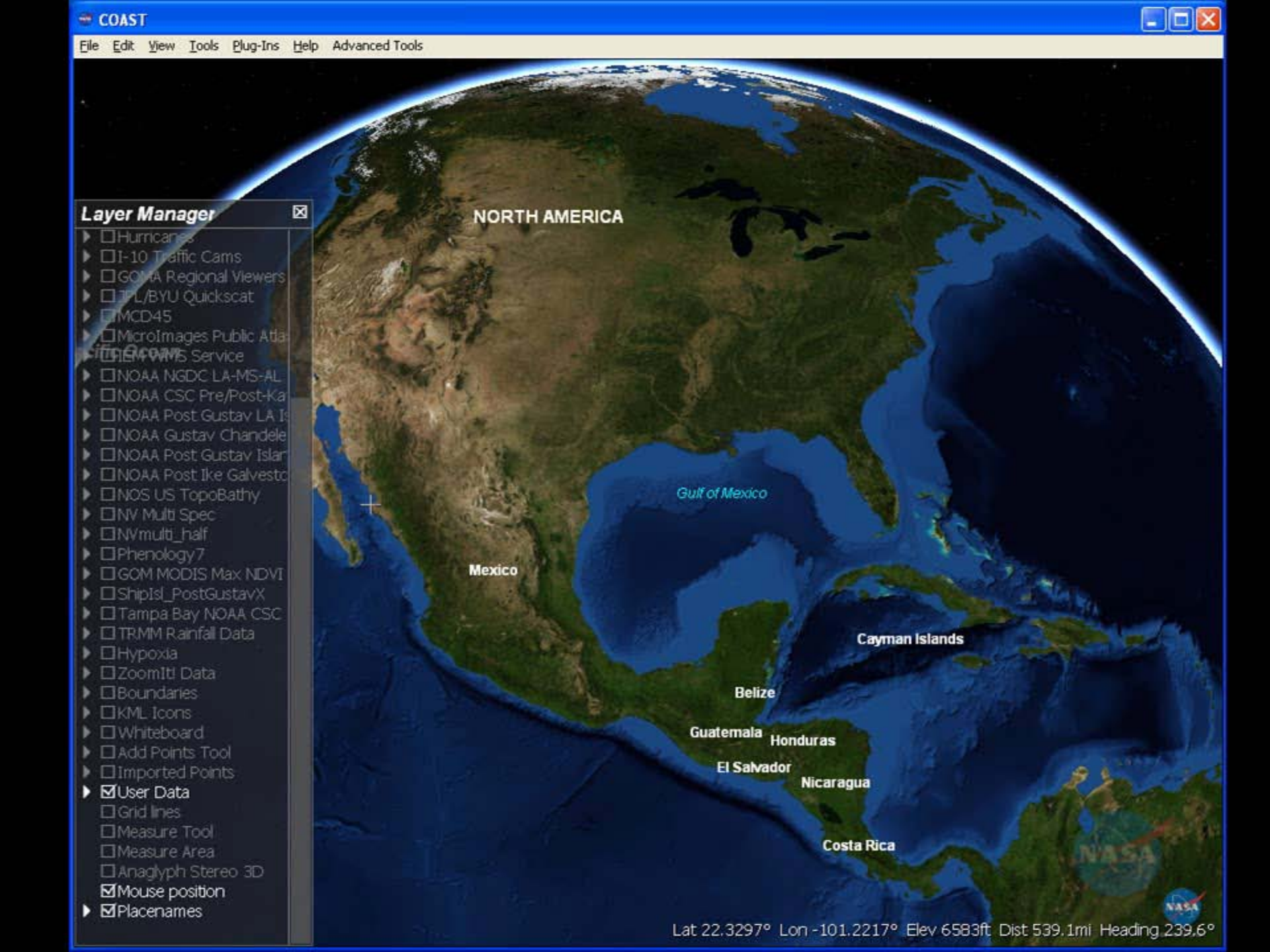
Import Data Tool:

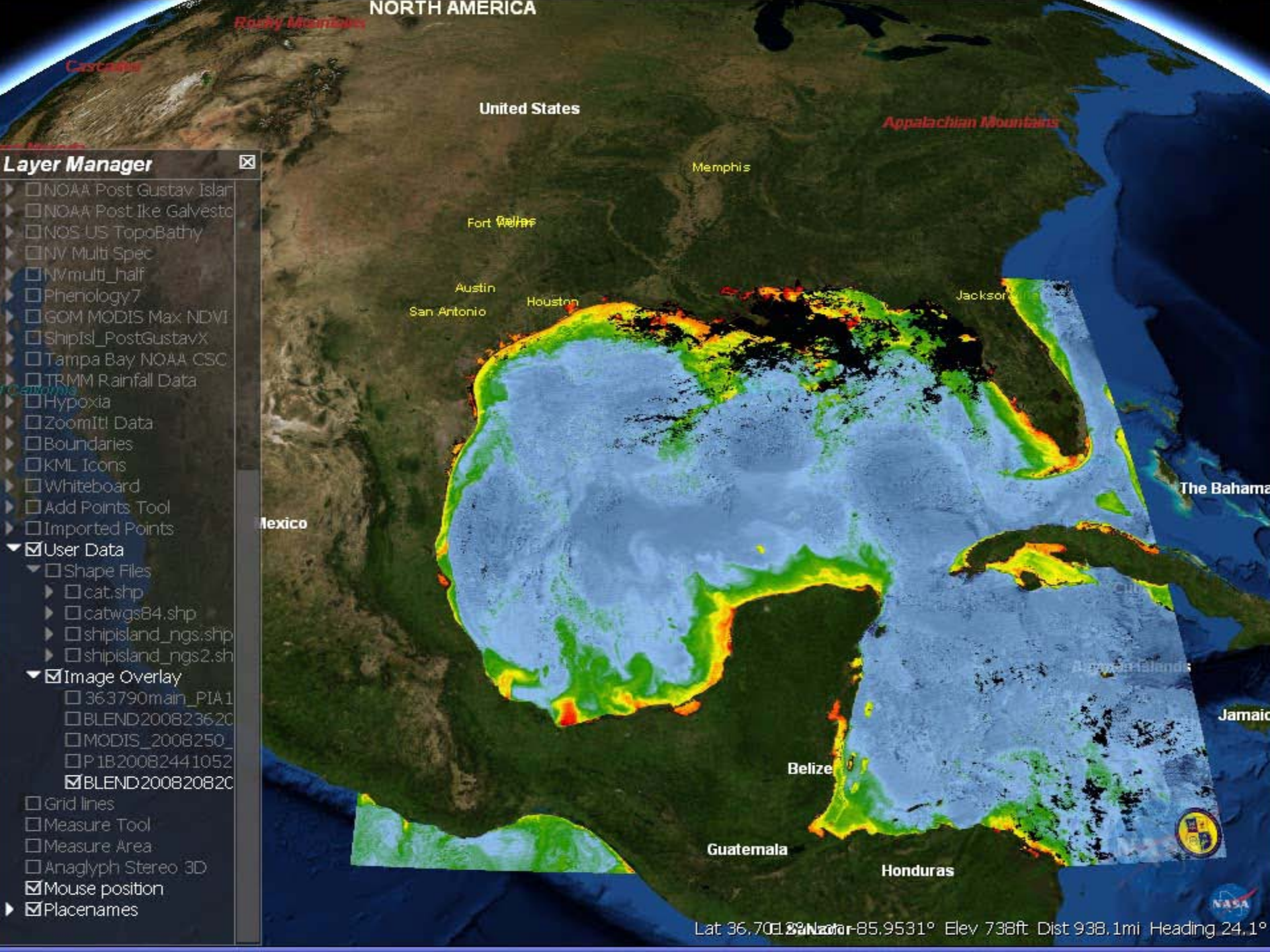
Interface Integration

- Combining some elements of previous Image Overlay[1], Shapefile Import[2], and Layer save/creation[3] 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


COAST
File Edit View Tools Plug-Ins Help Advanced Tools
Layer Manager
Hurricanes
I-10 Traffic Cams
GOMA Regional Viewers
TAMU/BYU Quickscat
MCD45
MicroImages Public Atlas
NEMAWMS Service
NOAA NGDC LA-MS-AL
NOAA CSC Pre/Post-Ka
NOAA Post Gustav LA Is
NOAA Gustav Chandele
NOAA Post Gustav Islan
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
ZoomItl 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°


NORTH AMERICA
Rocky Mountains
Cascades
United States
Appalachian Mountains
Memphis
Fort Worth
Dallas
Austin
San Antonio
Houston
Jacksonville
The Bahamas
Mexico
Jamaica
Belize
Guatemala
Honduras
Layer Manager
NOAA Post Gustav Islar
NOAA Post Ike Galveste
NOS US TopoBathy
NV Multi Spec
NVmulti_half
Phenology7
GOM MODIS Max NDVI
ShipIsl_PostGustavX
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Add Points Tool
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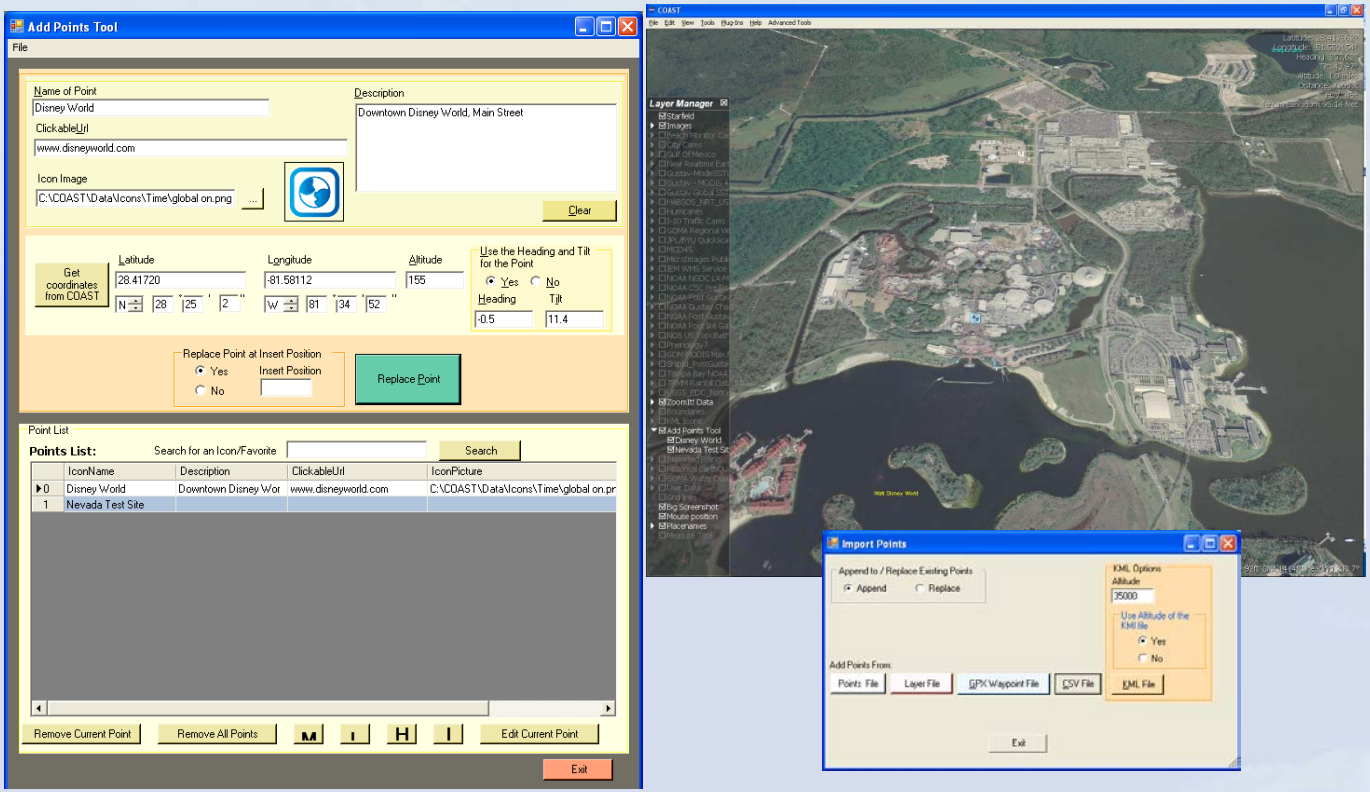
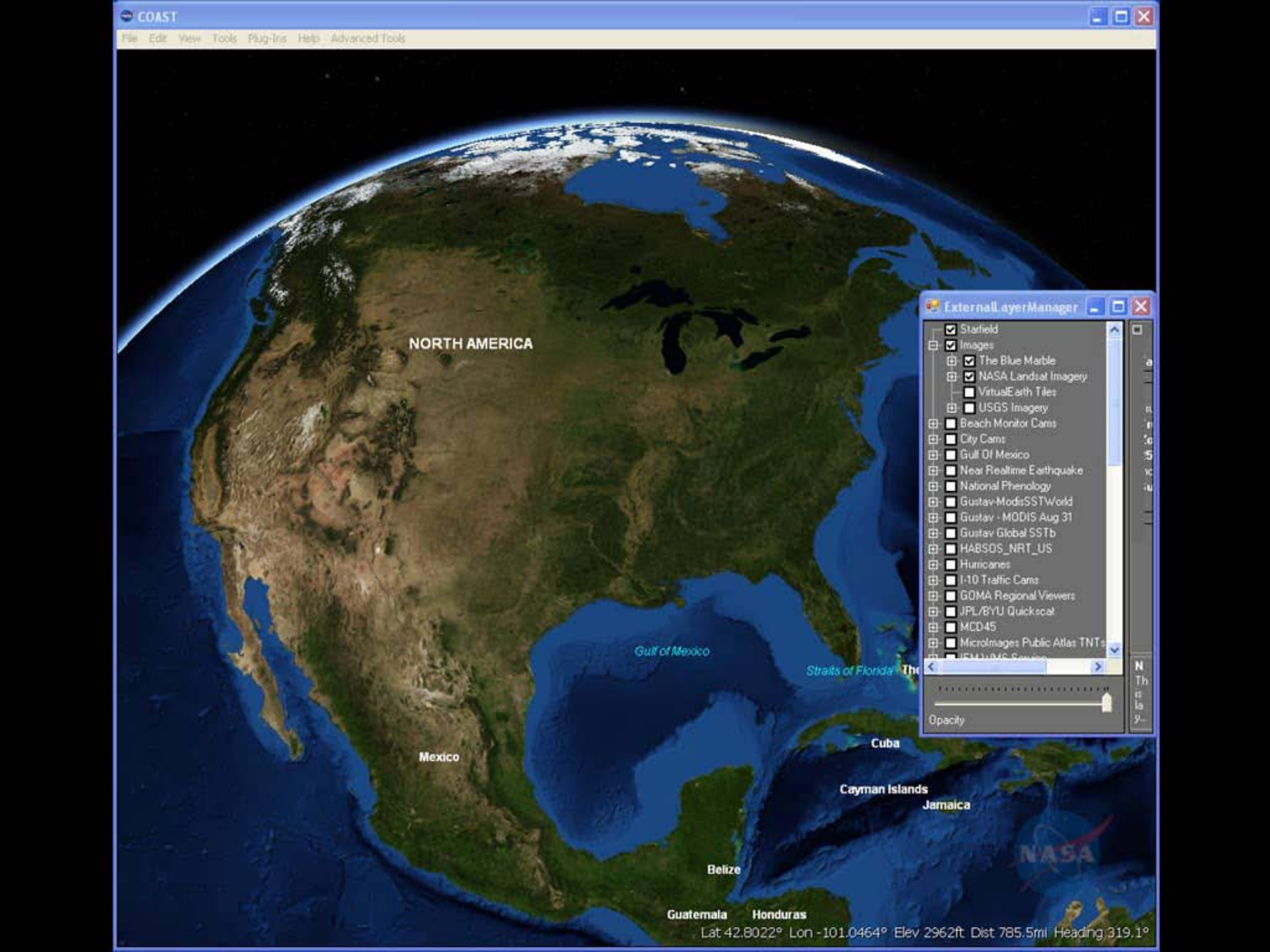
User Data
Shape Files
cat.shp
catwgs84.shp
shipisland_ngs.shp
shipisland_ngs2.sh
Image Overlay
363790main_PIA1
BLEND20082362C
MODIS_2008250_
P1B20082441052
BLEND20082082C
Grid lines
Measure Tool
Measure Area
Anaglyph Stereo 3D
Mouse position
Placenames
Lat 36.70 Lon -85.9531° Elev 738ft Dist 938.1mi Heading 24.1°

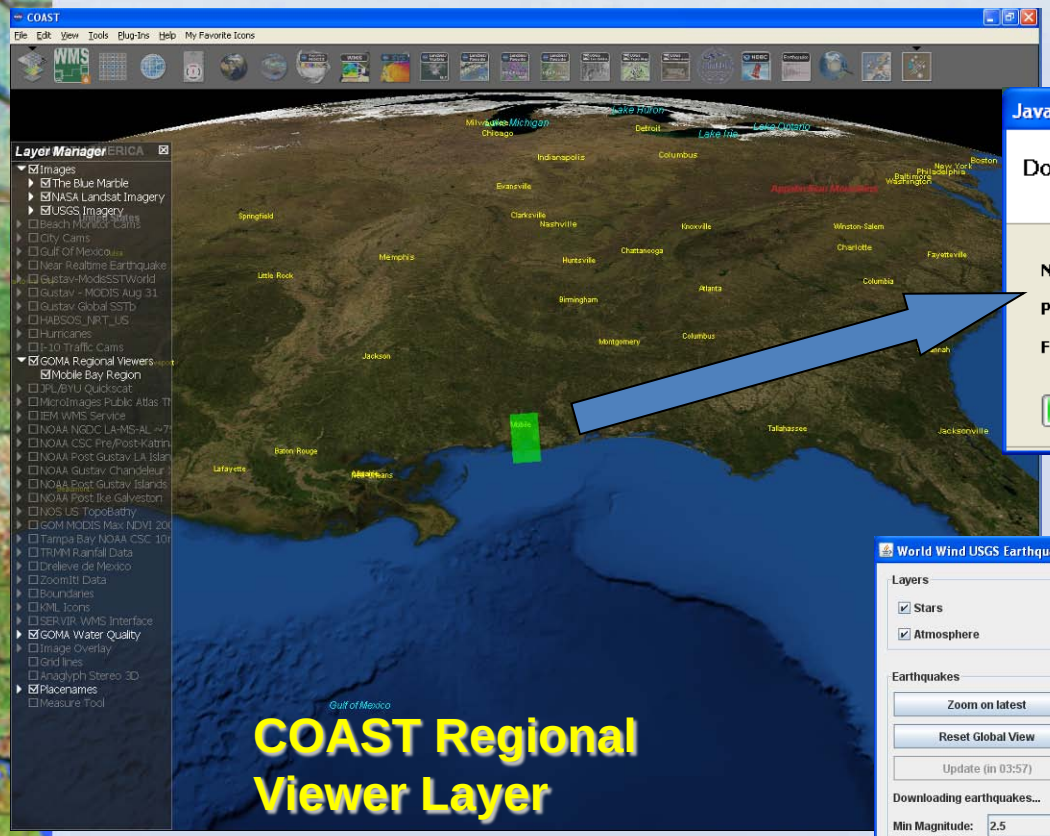
COAST 2.0: Add Points Tool



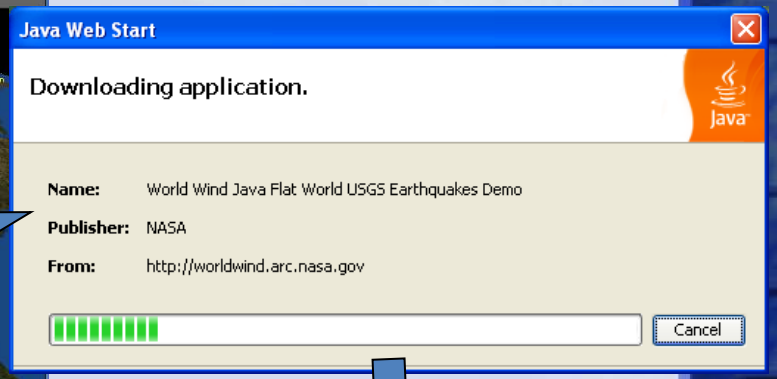
- User has the capability to directly digitize points onto the COAST interface, to add metadata and links directly, and to save the added points out to several shareable formats for use by others
- Users also have the option of typing in Web link addresses and location descriptions, and of selecting 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
File Edit View Tools Plug-Ins Help Advanced Tools
NORTH AMERICA
ExternalLayerManager
Starfield
Images
The Blue Marble
NASA Landsat Imagery
VirtualEarth Tiles
USGS Imagery
Beach Monitor Cams
City Cams
Gulf Of Mexico
Near Realtime Earthquake
National Phenology
Gustav-ModisSSTWorld
Gustav - MODIS Aug 31
Gustav Global SSTb
HABSOS_NRT_US
Hurricanes
I-10 Traffic Cams
GOMA Regional Viewers
JPL/BYU Quickscat
MCD45
MicroImages Public Atlas TNT
Opacity
Gulf of Mexico
Straits of Florida
Cuba
Mexico
Cayman Islands
Jamaica
Belize
Guatemala
Honduras
NASA
Lat 42.8022° Lon -101.0464° Elev 2962ft Dist 785.5mi Heading 319.1°

Potential Developments



COAST Regional Viewer Layer



COAST "Java Regional Viewer"

Integrated Regional Java Browser (prototype example)

COAST
2.0
Questions?