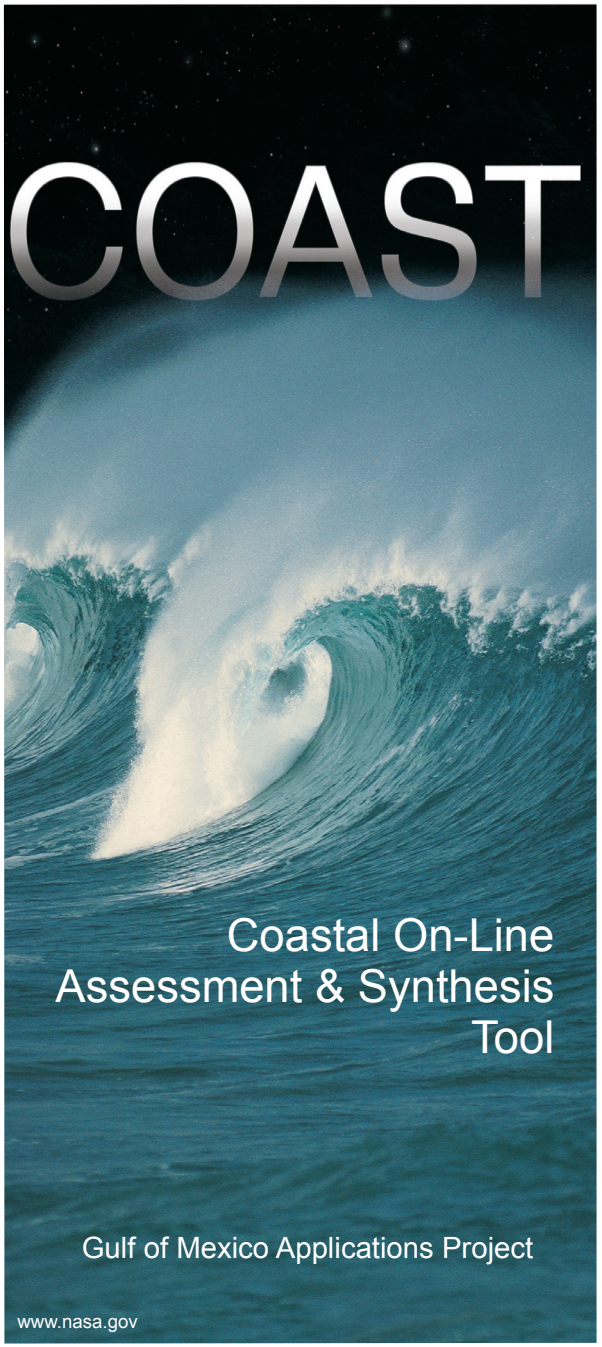
National Aeronautics and Space Administration



Mapping the Data:
Data sources and access for COAST

Applicable sources of online data are being compiled and submitted for consideration for inclusion into the COAST project interface. Access methodologies of various types (WMS (Web Mapping Service), online data/product directory, FTP (file transfer protocol), KML (Keyhole Markup Language), etc.) are being identified for each data source and appropriate tools are being tested for integration into COAST to allow flexible data input options. Sources of data identified as useful by the user community for inclusion in COAST that are accessible through one of COAST's data inclusion tools (TVT, Image Overlay Tool, WMS to Layer Tool, KML Import) will be mapped and stored as accessible layers within the UI. Data access tools are being modified/created as needed to allow ease of mapping to the data as well as user control over class and temporal mapping of the data. Data layers add-ons will also be made accessible through the COAST website for current users to download and install.

Sharing and Showing:
Developing presentation formats within COAST

The Save Screenshot function allows users to share session screen views. Other COAST session sharing functions will be made available and posted to the COAST Website.
Techniques/tools are currently being developed to allow for manual and scripted presentations of data analysis sessions to be shared by users and also to allow for an easily shared collaborative capability within COAST. Initial efforts will focus on creating a capability similar to Dapple's (Geosoft) Worldwind-based "Export Scene" function that allows a project session state to be saved with all data layers, mappings, and viewshed in a single definition file. As an example, this small file could then be shared or posted online to allow a collaborative common reference between project principals.

Exploration and Testing:
COAST as project data integrator for Gulf of Mexico Coastal data

COAST capabilities are being tested/demonstrated with ongoing Hypoxia and Regional Sediment modeling studies data that has been identified for investigation and integration into COAST data layers. Modifications or additions to the COAST capability toolset for use with these projects will be identified, tested through user groups, and integrated if proven value added to the community. The SSC development team will also be investigating the possibility of including COAST project files as links from the Coastal Website project description pages and hub sites. If proven feasible, this would take on a similar functionality to the KML Google Earth link schema that would launch a COAST viewer (after download) from the Web site for immediate online project data discovery by individuals. It is hoped that this functionality would provide a significant value-added capability for the current subject data user community.

For more information please contact the following at Stennis Space Center:

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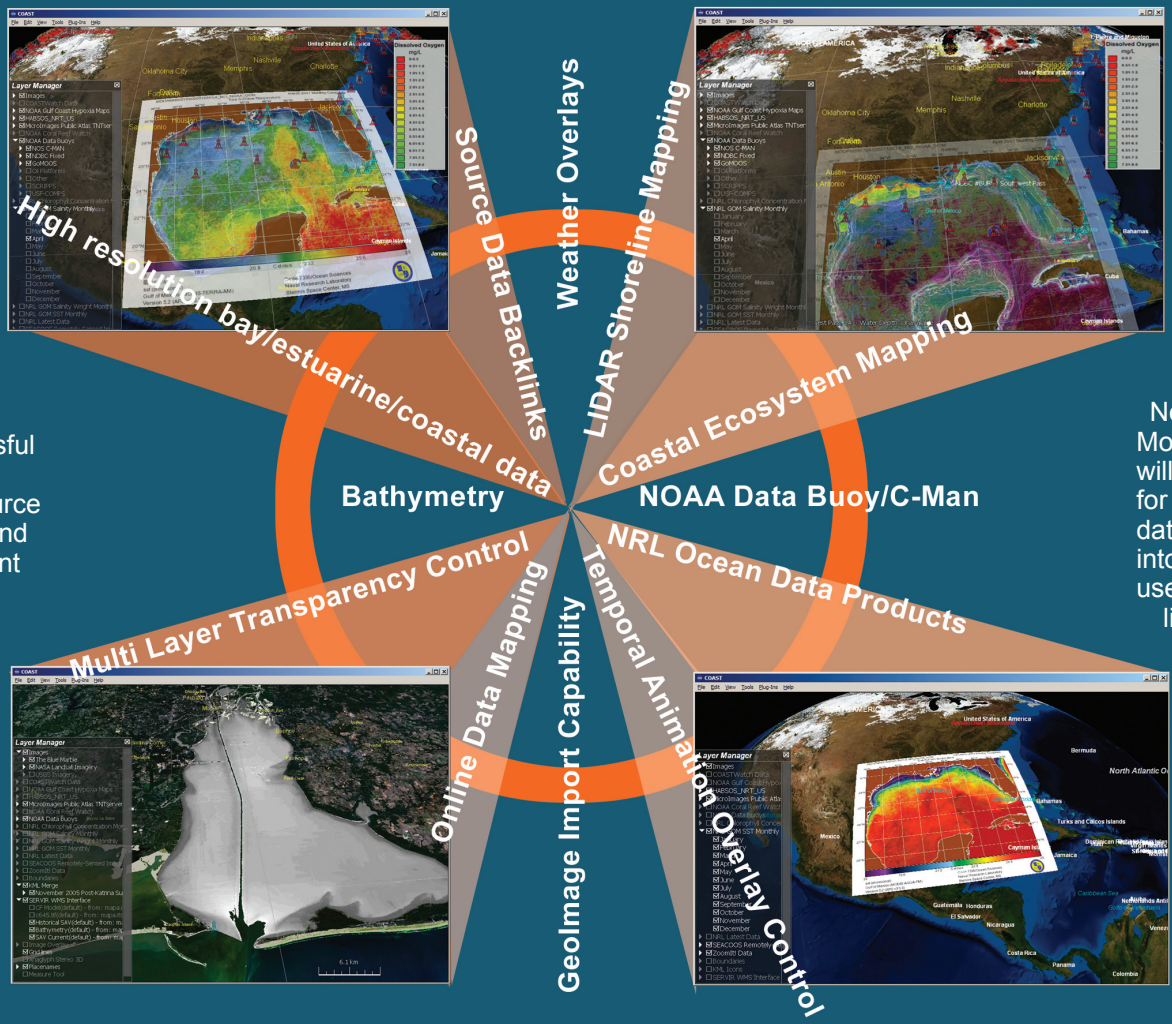
Gulf of Mexico Applications Project

COAST:
NASA OpenSource Heritage Leveraged for Scientific Insight

The Coastal Online Assessment and Synthesis Tool (COAST) geobrowser is being developed at NASA SSC for use in integrating previously disparate NASA and other agency coastal data sets into a common desktop tool that will provide insightful new data visualization and analysis capabilities for the coastal researcher. COAST is built upon the immensely successful NASA opensource 3D geobrowser, Worldwind, developed at NASA Ames Research Center. COAST also has integrated some of the value-added modifications and enhancements that have been implemented in the successful MSFC versioning of Worldwind, SERVIR-Viz. The NASA opensource heritage of COAST from Worldwind lends great userbase development leverage and usability due to the large international opensource developer community that has grown over the past several years.

COAST is being developed to make maximum use of open source data access, viewing, and data manipulation software tools for a low cost, widely installable base of potential users upon completion of the initial COAST release. Because COAST is a developmental tool, subsequent changes/ enhancements to its core capabilities will be reflected in regular incremental updates that coincide with major lifecycle modification points.



Discovery and Fusion:
User Interface and Additional Tools

An enhanced user interface (UI) is being prototyped and tested by the SSC development team. This interface will provide a user-friendly, yet data-robust and efficient means for users to discover, visually analyze, and access imagery and related data layers from within COAST and allow for linkage back to the raw data source if available online for further analysis outside of the UI. One of the enhancements will be built upon the initial developmental Temporal Visualization Tool (TVT) UI for COAST begun in the 2007 Integrated Approach to Monitoring Hypoxia in the Northern Gulf of Mexico project. Modifications to this tool and others will be targeted to allow capabilities for users to connect to and map datasets located locally and online into project sessions for COAST users. The TVT allows direct data listing of accessible online raster datasets and subsequent temporal overlay animation and transparency control over the animated layer within COAST.

Initial efforts are focusing on smarter data access and sorting by classification and temporal range within the UI and also on developing techniques for establishing look-back connections to origin data to allow for direct linkage to external data analysis and processing tools from within COAST that are germane to the parent project.