

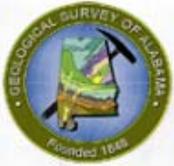
NASA Workshop



SANDS - Sediment Analysis Network for Decision Support

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the University of Alabama in Huntsville

Sandy Ebersole
Geological Survey of Alabama



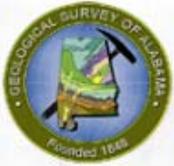
Objectives



Help resolve the GOMA priority issues by providing sediment related decision support products to groups involved in coastal management, conservation, planning, recovery, and mitigation



Provide end users the opportunity to better analyze, detect, and identify compositions and patterns of suspended sediment and sediment deposits.



Influence of Sediment Disturbance



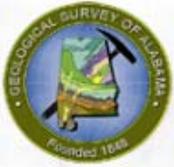
Since the year 2000, eastern Louisiana, coastal Mississippi, Alabama, and the western Florida panhandle have been affected by 28 tropical storms, seven of which were hurricanes.

These tropical cyclones have significantly altered normal coastal processes and characteristics in the Gulf region through sediment disturbance.

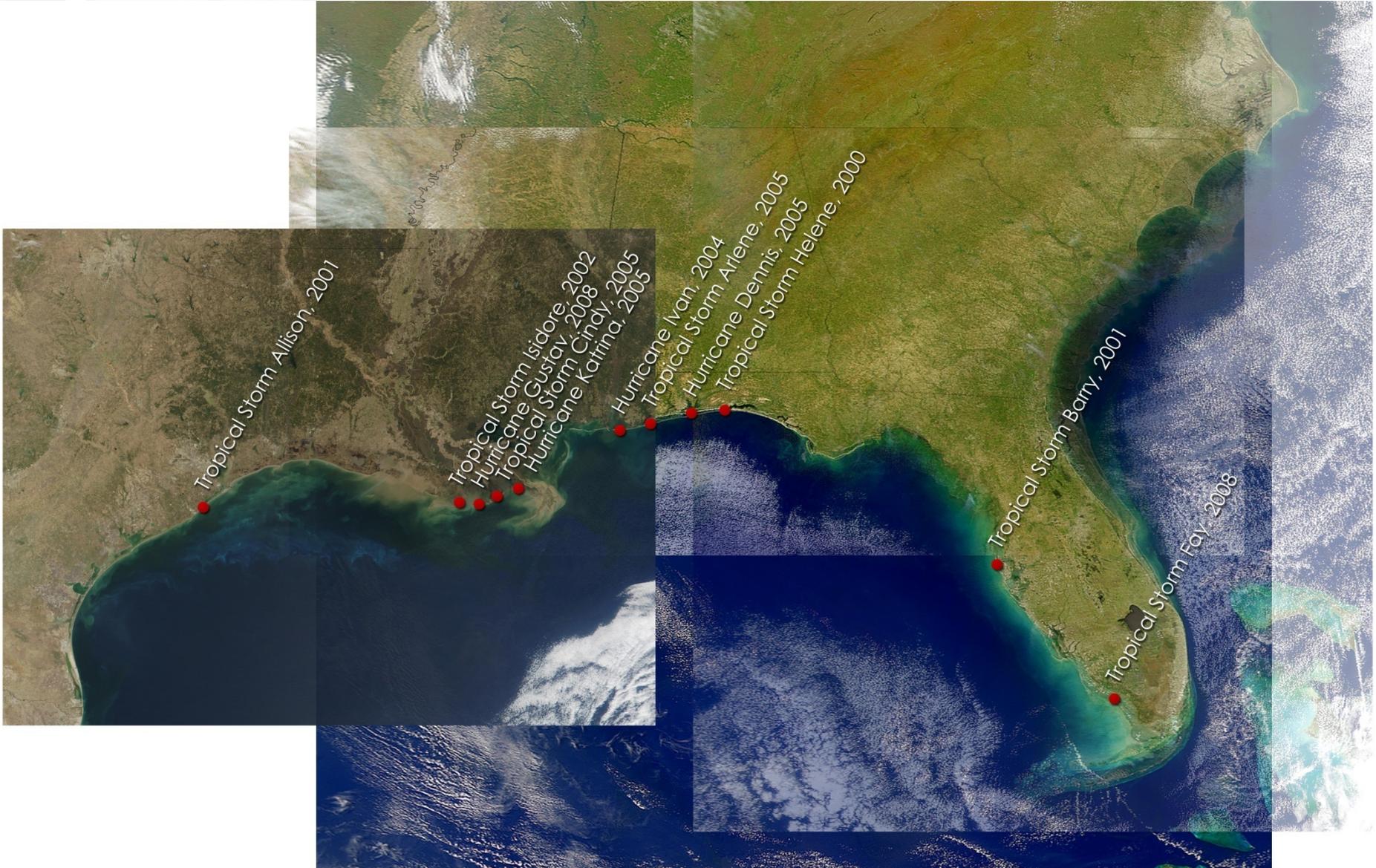
In fact, tropical storm-induced sediment disturbance is a factor in four of the five Gulf of Mexico Alliance (GOMA) priority issues:

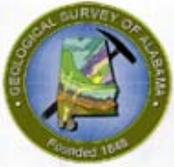
- water quality for beaches and shellfish beds,
- wetland and coastal conservation restoration,
- characterization of Gulf habitats,
- and reduction of nutrient inputs to coastal systems.





Landfall Locations for Storms in SANDS Study Area

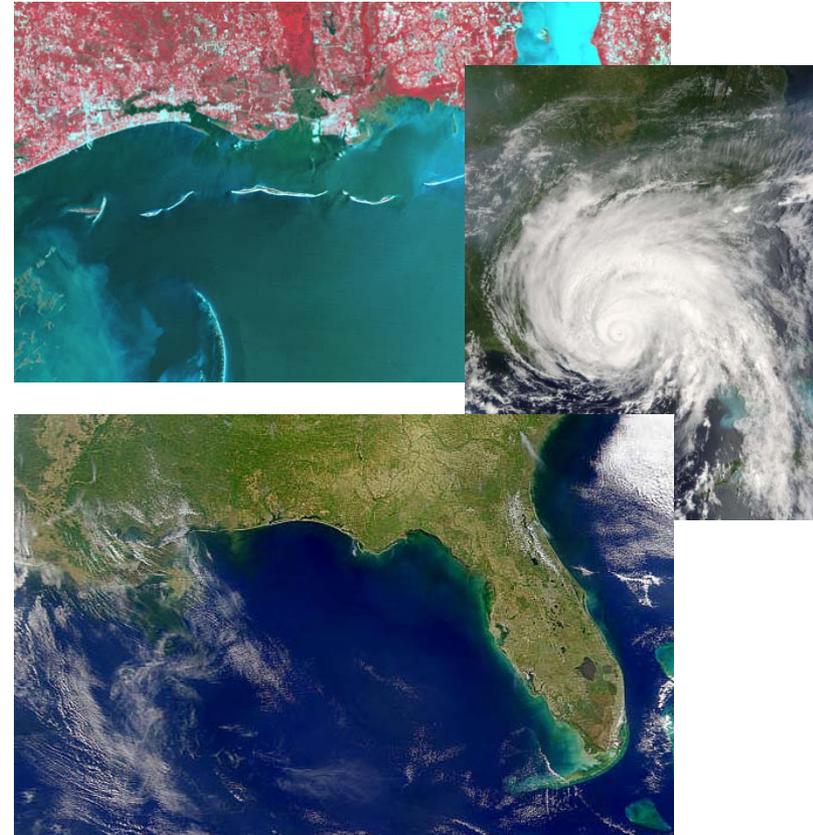


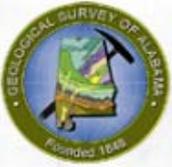


SANDS Source Data

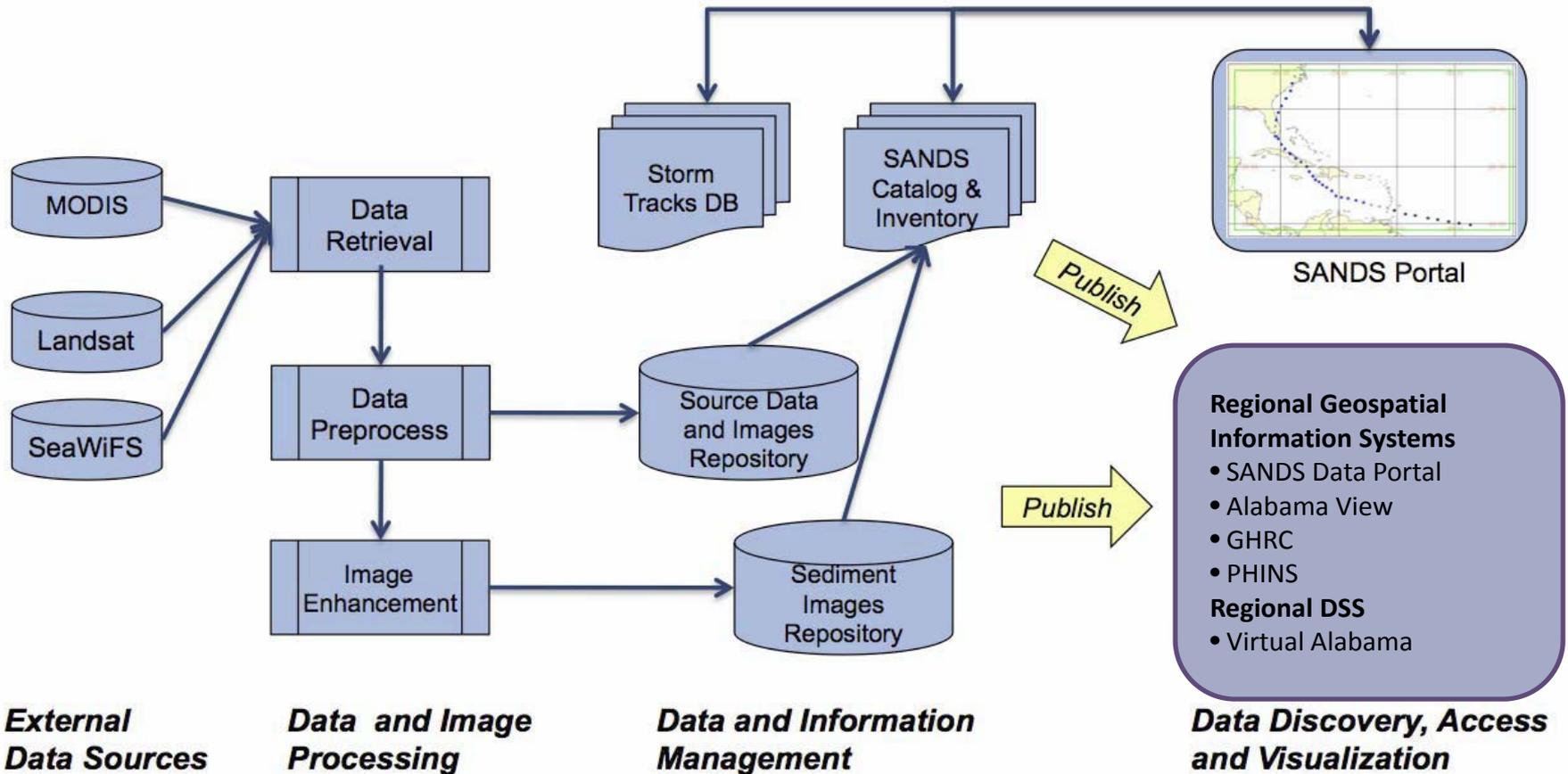


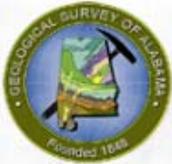
- Landsat 7 ETM+ all bands for 2000 through 2002
- Landsat 5 TM all bands for 2003 through 2008
- MODIS Aqua surface reflectance bands 8 through 16
- SeaWiFS data, all bands, covering the region
- SRTM elevation data
- NDVI and EVI vegetation indices derived from MODIS



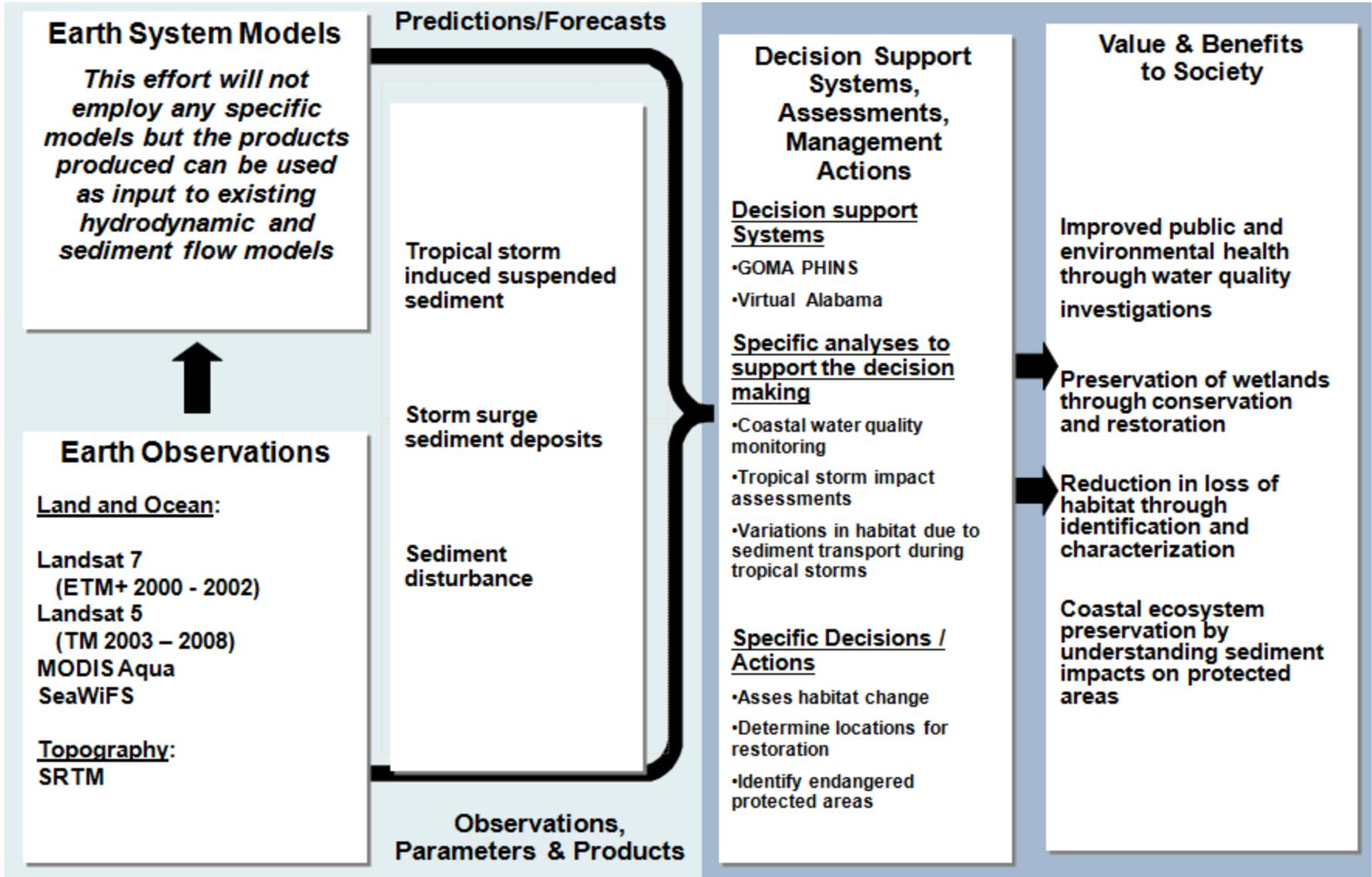


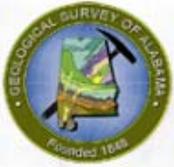
System Architecture



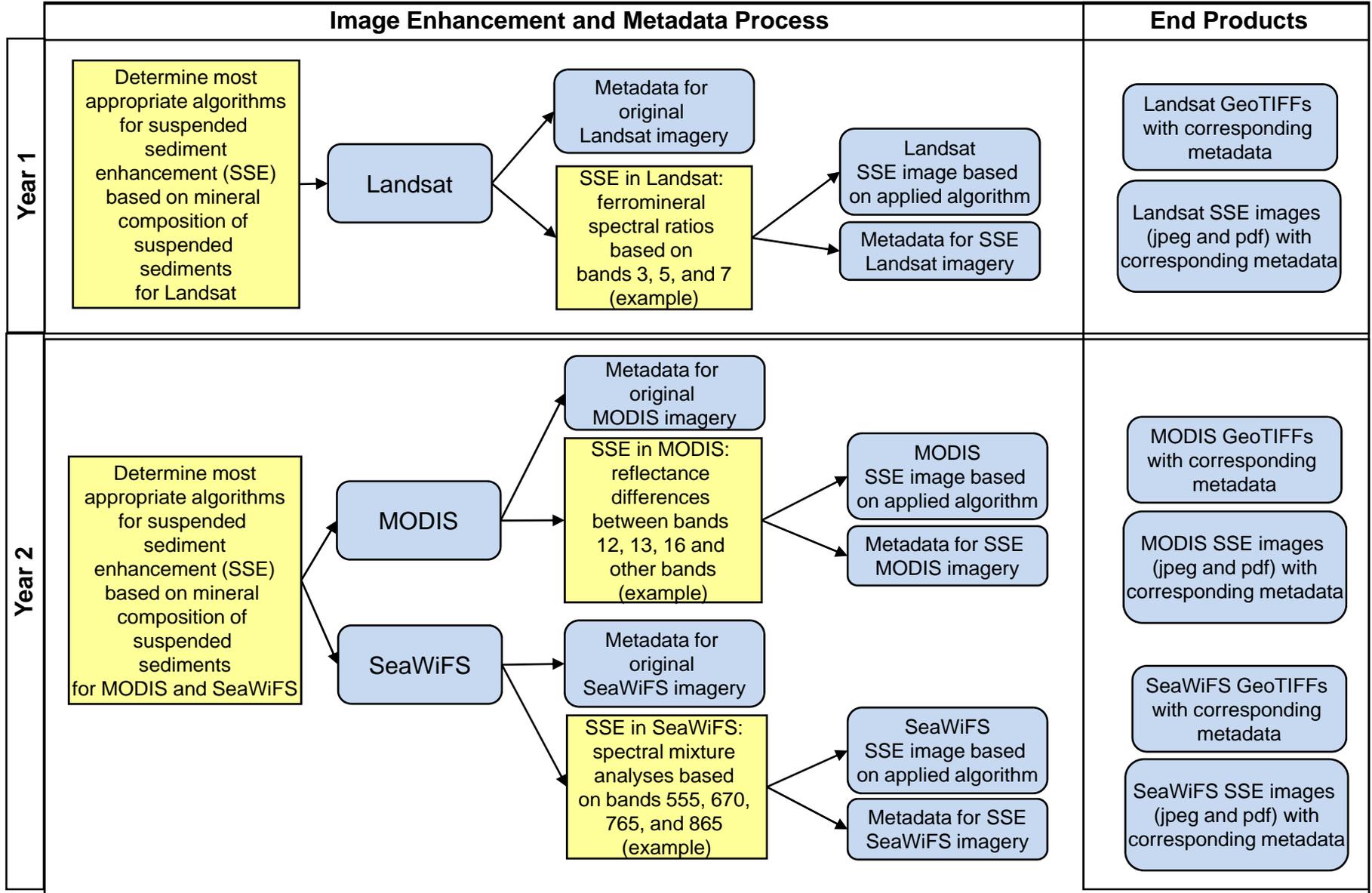


ISS Diagram





Product Generation Process

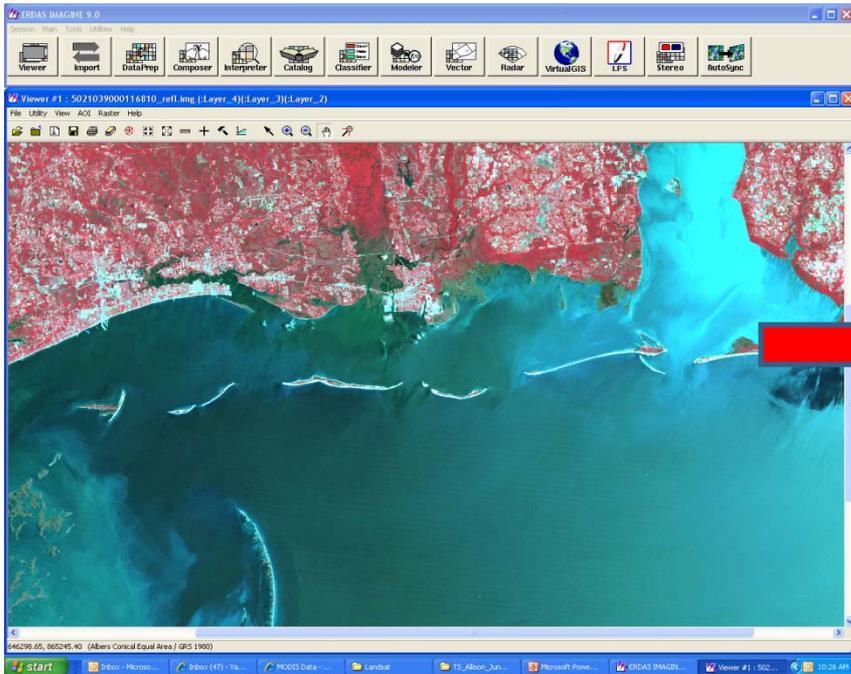




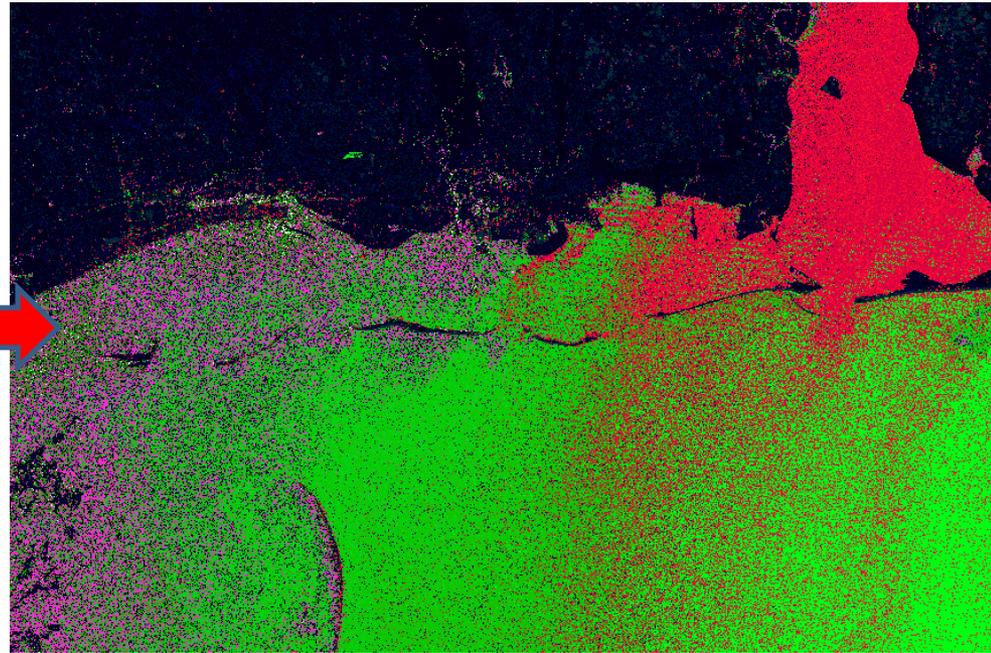
Example: SANDS Product Generation

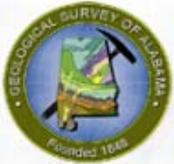


Landsat Imagery



Mineral Enhancement Decision Support Product





Data Product Distribution



www.alabamaview.org

<http://phins.sam.usace.army.mil/>



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Mark Area

Executes search of digital library hosted by USGS

Edit Referenced Dialog

Edit Layers Dialog

User Login

Map Options

User Guide (PDF)

SANDS
Sediment Analysis Network for Decision Support

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Since the year 2000, eastern Louisiana, coastal Mississippi, Alabama, and the western Florida panhandle have been affected by 28 tropical storms, seven of which were hurricanes. These tropical cyclones have significantly altered normal coastal processes and characteristics in the Gulf region through sediment disturbance. In fact, tropical storm-induced sediment disturbance is a factor in four of the five COMA priority issues.

Search

Location

Layers

Legend

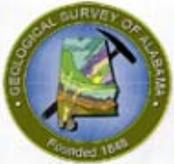
Scale

Map

portal.gsa.state.al.us/

ghrc.nsstc.nasa.gov/

www.dhs.alabama.gov/virtual_alabama/home.aspx



Related Coastal Projects



CAMEX

3D Convection and Moisture Experiment

Mission Description

Instruments

Organization

Latest News & Events

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CAMEX-4

The fourth Convection and Moisture Experiment

TCSP

NASA African Monsoon Multidisciplinary Analysis (NAMMA)

NASA Tropical Storm Field Campaigns

NASA Tropical Storm Field Campaigns

SERVIR

The Meteorological Regional Visualization and Modeling System

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SERVIR

GoMRC

Gulf of Mexico Regional Collaborative

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GoMRC/COAST

NAMMA

NASA African Monsoon Multidisciplinary Analysis

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NAMMA

SCOOP

SURA Coastal Ocean Observing and Prediction (SCOOP) Program

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SCOOP

Battelle

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OpenStax OSU

SURA SCOOP

With sea level rise, coastal development, and other factors, the Gulf of Mexico coastal region is facing a number of important challenges.

Objectives:

- Integrate diverse information services and technologies that advance the sciences of prediction and hazard planning for our nation's coastal populations.
- Integrate diverse observations and empowering a virtual community of scientists with the tools, resources, and ideas that lead to discovery.
- Promote the effective and rapid fusion of diverse oceanographic data with numerical models and to facilitate the rapid dissemination of information to operational, scientific, and public or private users.

Goals:

- Creating an open access, distributed laboratory for oceanographic

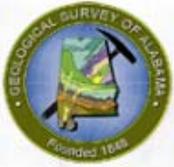
Tropical Cloud Systems and Processes

The Tropical Cloud Systems and Processes (TCSP) is a multi-agency, multi-institutional investigation of the tropical convective systems of the National Aeronautics and Space Administration (NASA). The TCSP is a major component of the Tropical Storm Field Campaigns (TSFC) and is being conducted during the period 1.07.2002 and 01.01.2003 out of the Joint Air-Sea Task Force (JASTF) and the Tropical Storm Field Campaigns (TSFC).

TCSP



Northern Gulf Coast Coastal Hazards Collaboratory



SANDS End Users



- Dauphin Island Sea Lab
GOMA Priority Area - water quality for beaches and shellfish beds
- Alabama Department of Conservation
GOMA Priority Area - wetland and coastal conservation restoration
- Department of the Interior Fish and Wildlife Service
GOMA Priority Area - characterization of Gulf habitats
- Mobile Bay National Estuary Program
GOMA Priority Area - reduction of nutrient inputs to coastal systems
- NOAA Center for Coastal Ocean Research
GOMA Priority Area - characterization of Gulf habitats

