

# **Gulf of Mexico Integrated Science: Tampa Bay Study**

## **Data and Information Management System (DIMS)**

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Chris Cretini, Johnson Controls World Services at NWRC  
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U.S. Department of the Interior  
U.S. Geological Survey

<http://gulfsoci.usgs.gov/tampabay>



# Integrated Science in the Gulf of Mexico: Tampa Bay



Established to develop an integrated science strategy for assessing and monitoring Gulf of Mexico estuaries by using Tampa Bay as a pilot study.

Goal is to promote multidisciplinary and multiagency science



USGS Gulf of Mexico Integrated Science - Welcome! - Micro...

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Address <http://gulfsi.usgs.gov/index.html> Go Links

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science for a changing world  
Gulf of Mexico Integrated Science

Gulf of Mexico Integrated Science (HOME)

Estuary Studies:

- Tampa Bay
- Mobile Bay
- Atchafalaya & Mississippi River
- Galveston Bay

Reports

Meetings

Maps & Aerial Photographs

Photo Tours

Meet the Scientists

Related Links

Contact Us

**Gulf of Mexico INTEGRATED SCIENCE**

Conceptual Model for Gulf of Mexico Estuaries Integrated Science

**Hot Topics**

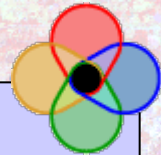
- 3rd Annual Science Conference January 30, 2004
- New! Tampa Bay Spatial Search
- New! Galveston Bay IMS
- Tampa Bay 2002 Science Poster Series
- Tampa Bay 2001 Open-File Report Series
- Tampa Bay Water Chemistry Maps
- Tampa Bay Field Trip Calendar
- Geology Leadership Conference
- Field Trip [Photo Tour]

**Estuaries** are a critical interface between terrestrial and marine ecosystems. **Gulf Estuaries** encompass approx. 30,000 sq. km. (42% of the total estuarine surface area of the U.S. excluding Alaska).

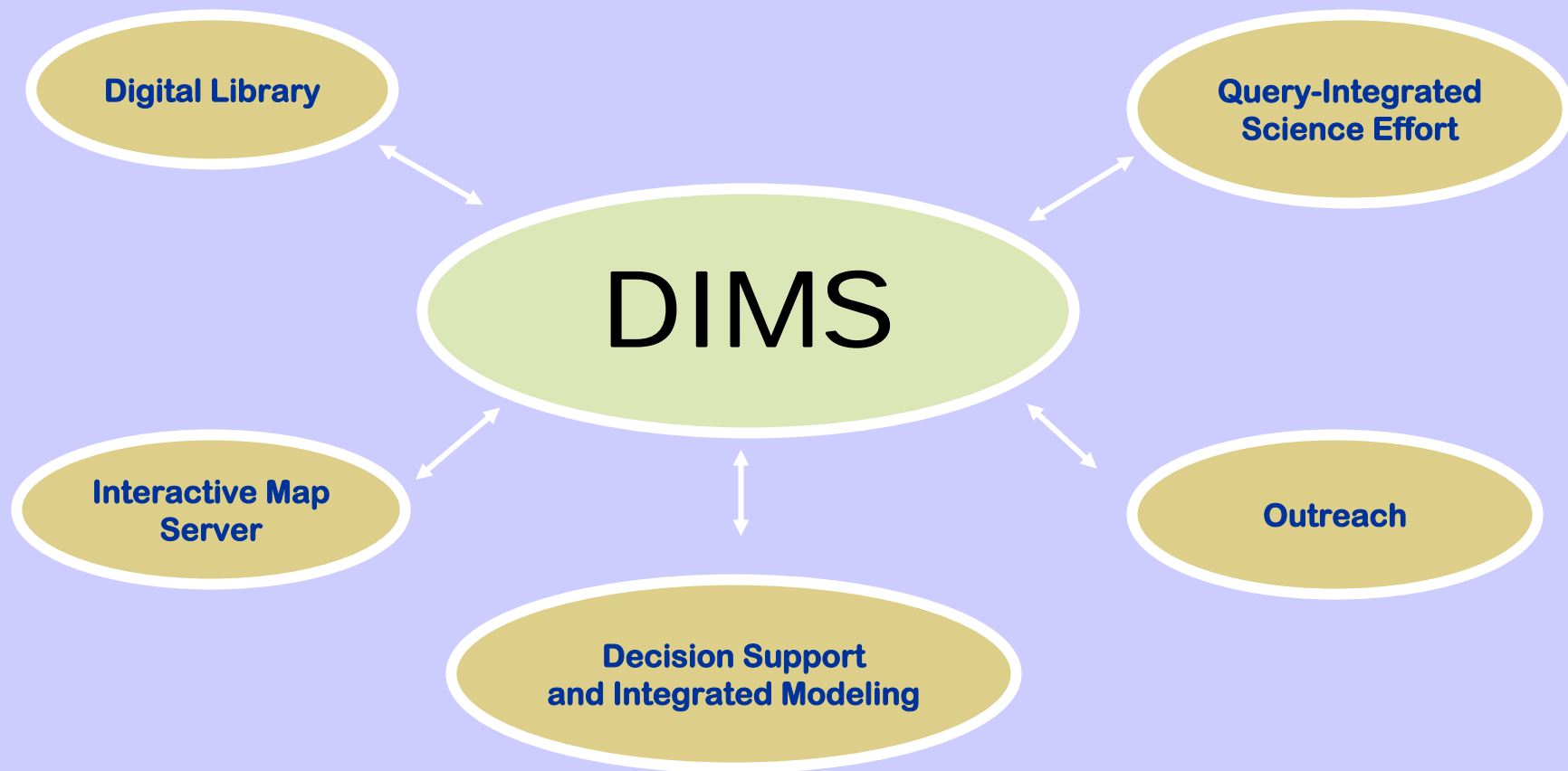
**Welcome** to the Gulf of Mexico Integrated Science website. The key to understanding complex estuarine systems lies in understanding the interactions between geological framework and biological, geochemical and hydrological processes. This project was established to develop an integrated science strategy for assessing and monitoring Gulf of Mexico estuaries using Tampa Bay as a pilot study. The success of this project is founded on coordination of a multidisciplinary team of USGS scientists with key [Federal, State and local agencies](#).

U.S. Department of the Interior, U.S. Geological Survey, Gulf of Mexico Integrated Science  
URL of this page is: <http://gulfsi.usgs.gov/index.html>  
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This page last revised: Thursday, October 09, 2003 @ 05:41 PM (RRK)  
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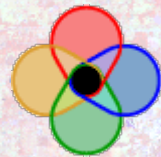
<http://gulfsi.usgs.gov/tampabay>



# What is a Data and Information Management System (DIMS)?





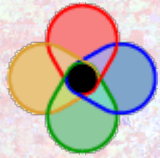


# Digital Library

- A Web-based clearinghouse for wide-scale distribution of data (spatial and nonspatial)
- Shared workspace: technical and nontechnical
- Efficient and economical
- Foundation for two other components, Interactive Mapping System (IMS) and predictive modeling



# Digital Library



Search: Tampa Bay Estuary Digital Library - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://gulfsce.usgs.gov/library/search.html> Go Links

**USGS**  
science for a changing world  
Gulf of Mexico Integrated Science

Home | Tampa Bay Study | Digital Library | Search

*Search the Digital Library*  
Tampa Bay Study

Enter the keyword or phrase you are interested in using as search criteria. If the keyword field is left blank, it will be treated as a wildcard.

Additionally, you can select a product type to further filter the query.

**Keyword search:**

☐ Search for exact phrase

**Product type:** You can select several types. (No checks returns all)

<input type="checkbox"/> Documents	<input type="checkbox"/> Photos
<input type="checkbox"/> Maps	<input type="checkbox"/> Posters
<input type="checkbox"/> Spatial Data	<input type="checkbox"/> Metadata
<input type="checkbox"/> Tabular Data	<input type="checkbox"/> Aerial Photos
<input type="checkbox"/> Web Resources	

**Sort by:**

U.S. Department of the Interior, U.S. Geological Survey, Gulf of Mexico Integrated Science  
URL of this page is: <http://gulfsce.usgs.gov/library/search.html>  
Comments or questions? Contact: [Renee Koenig - Webmaster](#) or 727-803-8747 ext. 3125  
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**FIRST GOV**

Internet

## Types of products:

- Documents
- Maps
- Spatial data (GIS)
- Tabular data
- Web resources
- Photos
- Posters
- Metadata
- Aerial photography indexes

# Digital Library

## Keyword Search: Topobathy



Tampa Bay Estuary Digital Library - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Print Mail Comment

Address [http://dl.nwrc.gov/tampa/prod\\_results4\\_tampa\\_new.asp?keyword=topobathy&sort=](http://dl.nwrc.gov/tampa/prod_results4_tampa_new.asp?keyword=topobathy&sort=) Go

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Home | Tampa Bay Estuary Digital Library | Search | Results

### Results: Tampa Bay Estuary Digital Library

Product Search Results: Total records found: 2

**Title:** An Integrated Topobathic/Bathymetric Elevation Model

**Product type:** poster

[View Details:](#)

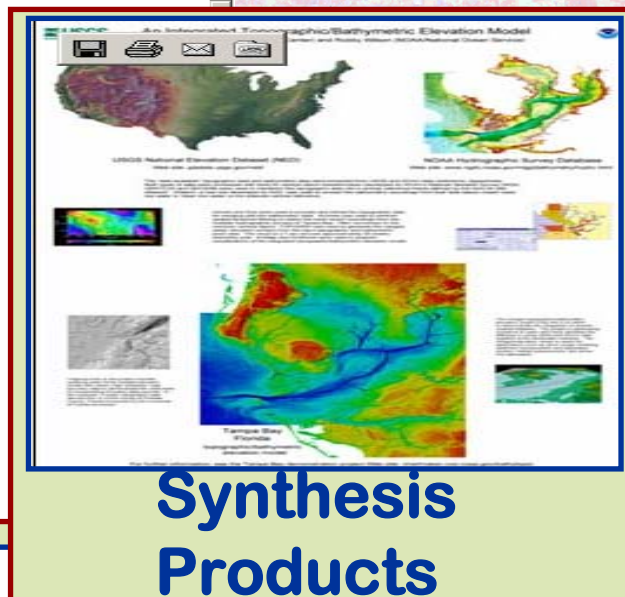
**Title:** Development of a Seamless Multisource Topographic/Bathymetric Elevation Model of Tampa Bay

**Product type:** doc

Page 1  
New Search

U.S. Department of the Interior, U.S. Geological Survey

Done



## Synthesis Products

Published as:

Gesch, D., and Wilson, R., 2002, Development of a seamless multisource topographic/bathymetric elevation model of Tampa Bay: Marine Technology Society Journal, v. 35, no. 4, p. 58-64.

### Development of a Seamless Multisource Topographic/Bathymetric Elevation Model of Tampa Bay

Dean Gesch and Robert Wilson

#### Abstract

Many applications of geospatial data in coastal environments require knowledge of the near-shore topography and bathymetry. However, because existing topographic and bathymetric data have been collected independently for different purposes, it has been difficult to use them together at the land/water interface owing to differences in format, projection, resolution, accuracy, and datums. As a first step toward solving the problems of integrating diverse coastal datasets, the U.S. Geological Survey (USGS) and the National Oceanic and Atmospheric

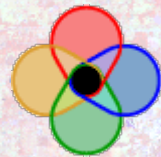
## Research Papers











# Digital Library Summary

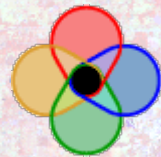
Hundreds of products available:

- 70 Documents
- 34 Spatial Data Sets
- 23 Tabular Data Sets
- 103 Maps
- 40 Web Resources

Approximately 150 products added this year:

- 1957 Black-and-White Aerial Photography
- 2003 Tampa Bay Surface Data
- 1950's Tampa Bay Habitat Data



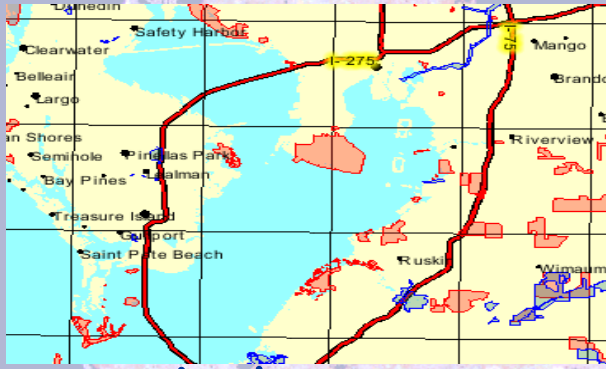


# Interactive Mapping System (IMS)

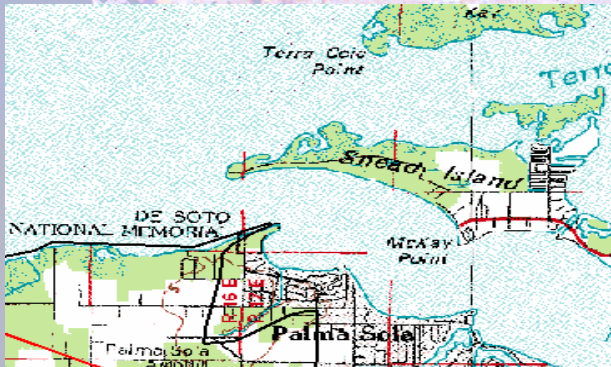
- A Web-based tool for viewing and distributing spatial (GIS) data
- Basic GIS functionality
- Multiple data formats: raster, vector, point, tabular
- Viewing, querying, and analyzing data
- Does not require software or licensing by the user!



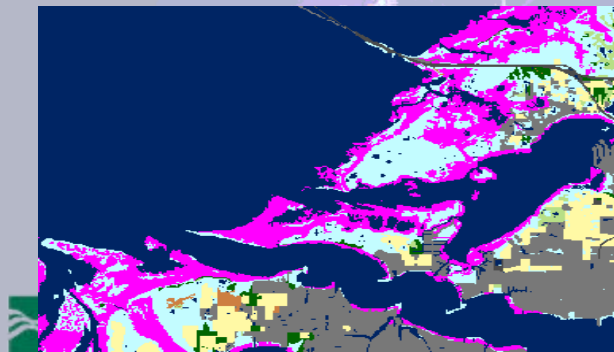
# Interactive Mapping System



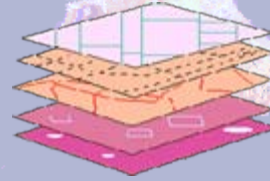
**vector base maps**



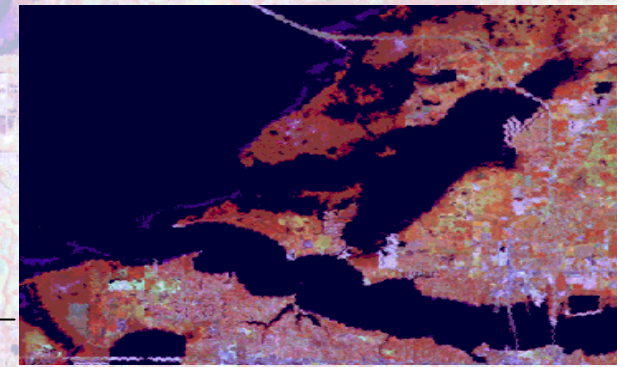
**digital raster graphics**



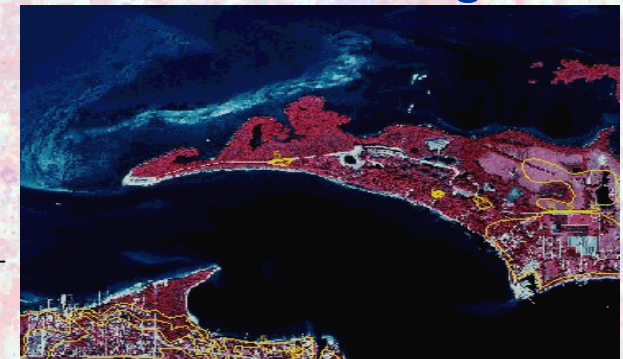
**land use-cover**



**natural color photos**



**satellite image**

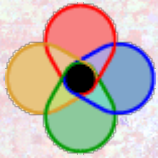


**color infrared photos**



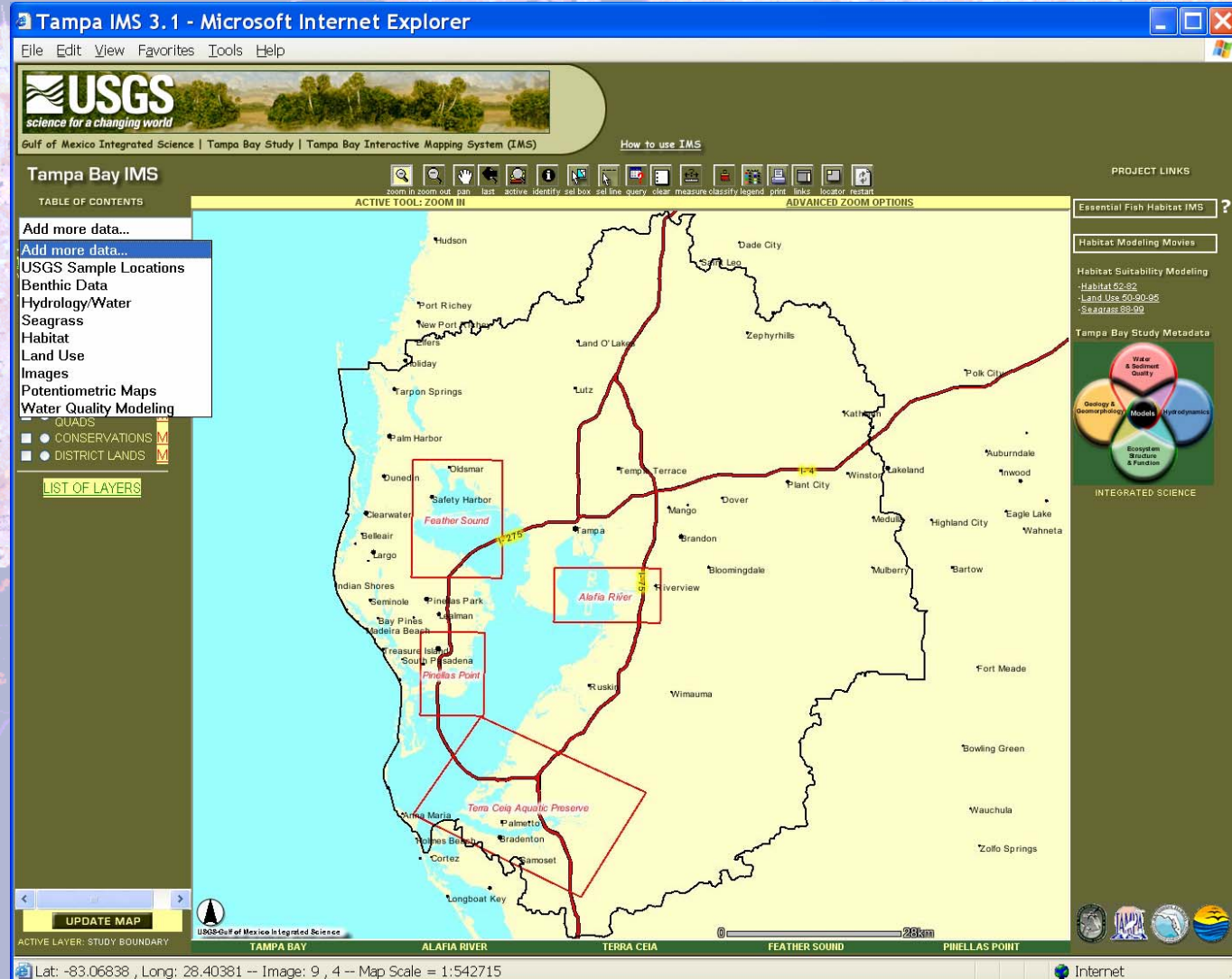
# Tampa Bay IMS

## IMS version 2 – Updated!



MORE Layers:

- Watershed sample sites
- Streamflow
- Benthic sampling
- Sample sites for Tampa Bay scientists and many more!



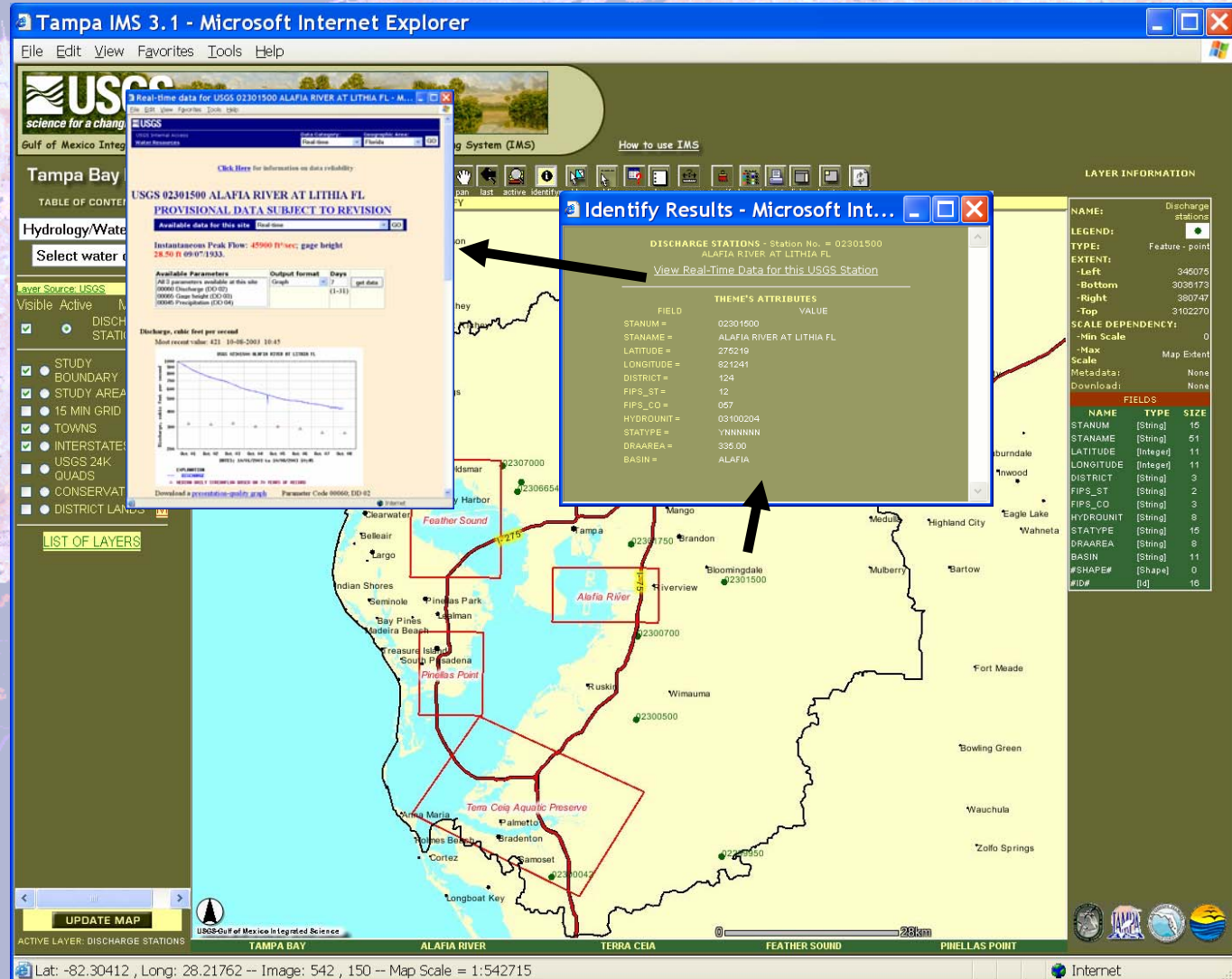


# Tampa Bay IMS

## USGS Streamflow Data

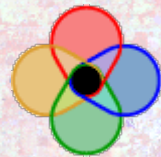


- Map streamflow locations
- Select a station
- Go to real-time data
- View hydrograph!
- The easiest way to view USGS flow data for Tampa Bay





# Query-Integrated Science



## Field Trip Calendar

Who is doing what...  
when...  
and where...

**Calendar Details - Microsoft Internet Explorer**

File Edit View Favorites Tools Help

Contact: [Justin Krebs](#) 727-803-8747 ext 3082  
Terra Ceia Buffer Preserve  
Site set-up  
Gheeno - McIvor

10/13/2003 PI: Pete Swarzenski  
Contact: [Pete Swarzenski](#) 727-803-8747 ext 3072  
Alafia River area  
Drill Barge 1  
groundtruth resistivity data, develop formation factors

10/14/2003 PI: Pete Swarzenski  
Contact: [Pete Swarzenski](#) 727-803-8747 ext 3072  
Alafia River area  
Drill Barge 1  
groundtruth resistivity data, develop formation factors

10/15/2003 PI: Pete Swarzenski  
Contact: [Pete Swarzenski](#) 727-803-8747 ext 3072  
Alafia River area  
Drill Barge 1  
groundtruth resistivity data, develop formation factors

10/16/2003 PI: Carole McIvor  
Contact: [Justin Krebs](#) 727-803-8747 ext 3082  
Mobley Bayou Preserve  
Fish sampling  
Gheeno - McIvor

10/16/2003 PI: Pete Swarzenski  
Contact: [Pete Swarzenski](#) 727-803-8747 ext 3072  
Alafia River area  
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Contact: [Justin Krebs](#) 727-803-8747 ext 3082  
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Gheeno - McIvor

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Contact: [Pete Swarzenski](#) 727-803-8747 ext 3072  
Alafia River area  
Drill Barge 1  
groundtruth resistivity data, develop formation factors

10/18/2003 PI: Carole McIvor  
Contact: [Justin Krebs](#) 727-803-8747 ext 3082  
Mobley Bayou Preserve  
Gheeno - McIvor

Done Internet

**Field Trip Calendar - Microsoft Internet Explorer**

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[Home](#) | [Tampa Bay Study](#) | [Field Trip Schedule](#) | [Add Trip](#) | [Trip Details](#) | [Edit Trips](#)

**Field Trip Schedule**

Show months  2003 through  2003

**Showing October, 2003 through October, 2003**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<b>Sep 28, 2003</b>	29	30	<b>Oct 1, 2003</b>	2 <a href="#">Justin Krebs</a> <a href="#">Dana Nielsen</a> <a href="#">Pete Swarzenski</a>	3 <a href="#">Justin Krebs</a> <a href="#">Dana Nielsen</a> <a href="#">Pete Swarzenski</a>	4 <a href="#">Justin Krebs</a> <a href="#">Pete Swarzenski</a>
5 <a href="#">Justin Krebs</a>	6 <a href="#">Kimberly Yates</a>	7 <a href="#">Kimberly Yates</a>	8 <a href="#">Kimberly Yates</a>	9 <a href="#">Kimberly Yates</a>	10 <a href="#">Justin Krebs</a>	11
12	13 <a href="#">Pete Swarzenski</a>	14 <a href="#">Pete Swarzenski</a>	15 <a href="#">Pete Swarzenski</a>	16 <a href="#">Justin Krebs</a> <a href="#">Pete Swarzenski</a>	17 <a href="#">Justin Krebs</a> <a href="#">Pete Swarzenski</a>	18 <a href="#">Justin Krebs</a>
19 <a href="#">Justin Krebs</a>	20 <a href="#">Justin Krebs</a> <a href="#">Dana Nielsen</a>	21 <a href="#">Dana Nielsen</a>	22 <a href="#">Dana Nielsen</a>	23 <a href="#">Justin Krebs</a>	24 <a href="#">Justin Krebs</a>	25
26	27	28	29	30	31	<b>Nov 1, 2003</b>

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Internet



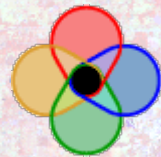




# Decision Support and Integrated Modeling

- Specifically designed programs incorporating data from the Digital Library
- Managing data and distributing information for Integrated modeling efforts
- Foundation for research and policy-making activities

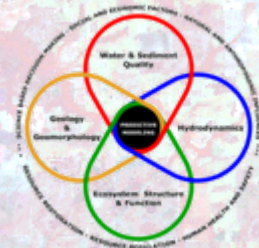




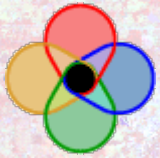
# Integrated Modeling

- System-wide predictive model of estuarine health
- Five components: circulation, water quality, sediment transport, groundwater, and submerged aquatic vegetation
- One- and two-component models will be integrated into a single model
- Products and tools developed by the model will be available to target audiences via the Website, IMS, and Digital Library

<http://gulfsci.usgs.gov>







# Outreach

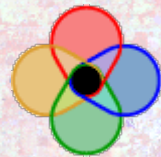
- Website
- Web-based tools: Digital Library and IMS
- Fact sheets
- Meetings
- Workshops

**Wetland Education Through Maps and  
Aerial Photography**





# Outreach



## Tampa Bay Study Internet Tools Workshop: 3<sup>rd</sup> Annual Science Conference

Learn how to use both the Digital Library and  
IMS for your research and management

activities!  
Two half day sessions:

9-11 am or 1-4 pm

January 29, 2003

at the

Florida Marine Research Institute  
St. Petersburg, FL

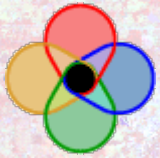
Please Note: There is a max of 12 participants for each session

Go to <http://gulfsci.usgs.gov/tampabay> to sign up



<http://gulfsci.usgs.gov/tampabay>





# Outreach

## We Need Your Input!!!

- **Populating the digital library with products:**
  - Do you have documents, maps, etc. to add?
  - What kind of queries are needed?
  - Comments?
- **Development of the IMS:**
  - What spatial datasets do you need for your management or research?
  - What utilities/tools would improve the IMS in meeting your needs?





# **Come see us and give us your input!**

## **DEMO TABLE**

**Come test out the digital library and new IMS**

- **Located at: Poster Rooms**
- **When:**
  - Monday at 5:00pm
  - Tuesday at 5:30pm
  - Wednesday at 5:30pm
- **Please stop by our demo table if you are interested in receiving an email notice on our Tampa Bay Internet Tools Workshop in January.**





# What's next?

- Further develop the Web site, IMS, and digital library with new products, data, and information
- Integrate these resources with other agencies and scientists working in Tampa Bay
- Provide training on how to use these resources for local managers, scientists, and the public
- Support the integrated modeling effort with data and information