

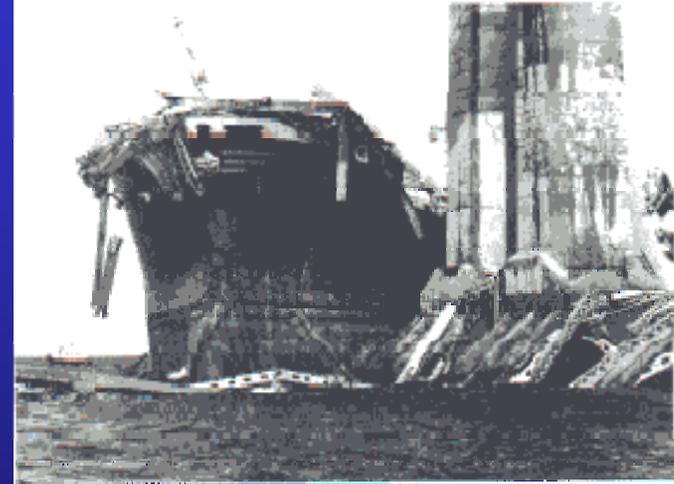


# **A Coastal Ocean Prediction System for Tampa Bay, Florida**

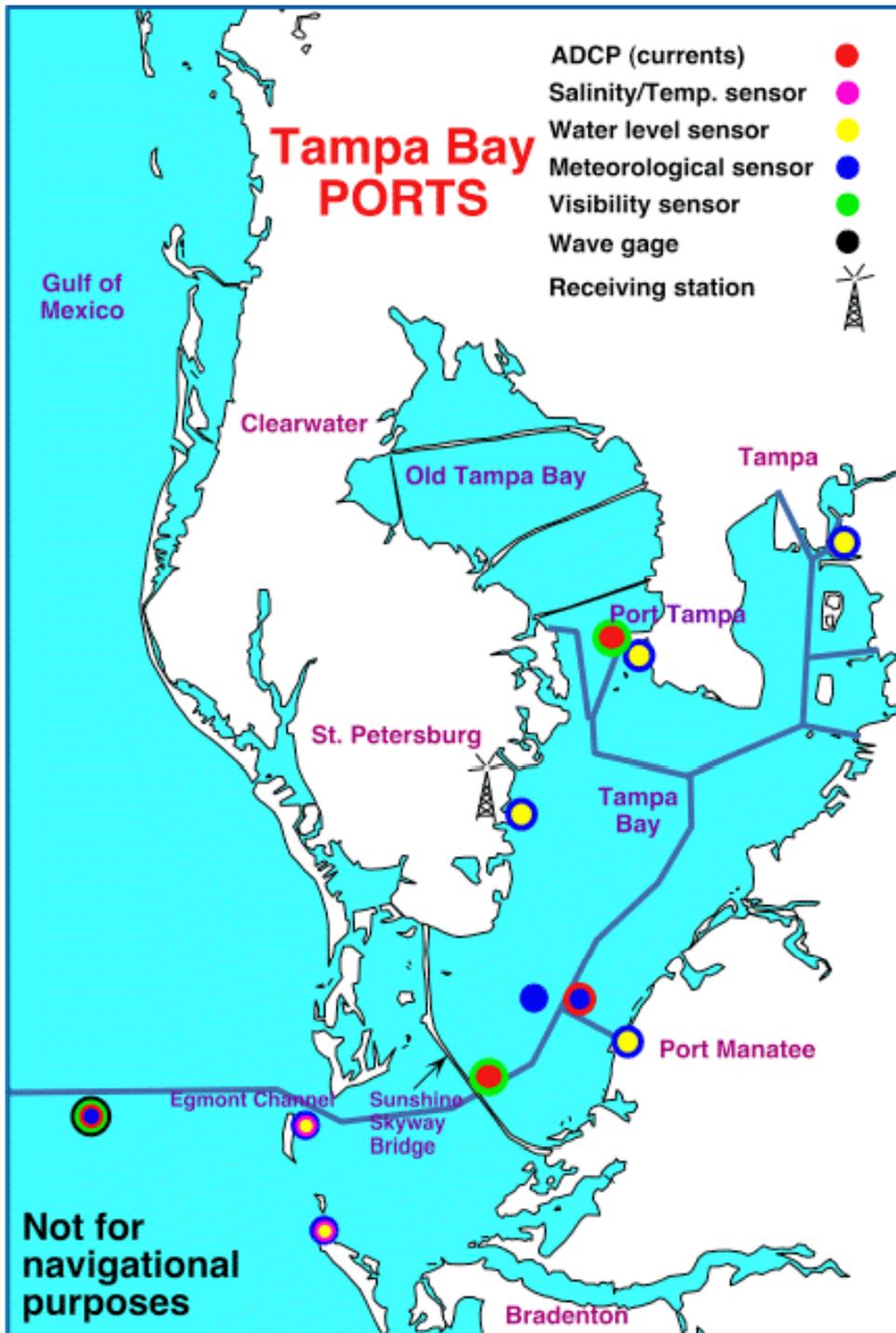
**Mark E. Luther, Steven D. Meyers,  
Sherryl A. Gilbert, Vembu Subramanian,  
Michelle McIntyre, Monica Wilson,  
Heather Havens, and Ali Hudon**  
University of South Florida College of Marine Science

# Sunshine Skyway Bridge Disaster

May 9, 1980



[http://www.sptimes.com/News/050700/TampaBay/Horrific\\_accident\\_cre.shtml](http://www.sptimes.com/News/050700/TampaBay/Horrific_accident_cre.shtml)



# Tampa Bay PORTS

Physical Oceanographic  
Real-Time System

Operated in collaboration  
with NOAA/NOS/Center for  
Operational Ocean Products  
and Services (CO-OPS) and  
local maritime interests  
Funding for operations from  
State and County trust funds  
and local users since 1992

Voice: 1-866-TB-PORTS  
[tidesandcurrents.noaa.gov](http://tidesandcurrents.noaa.gov)

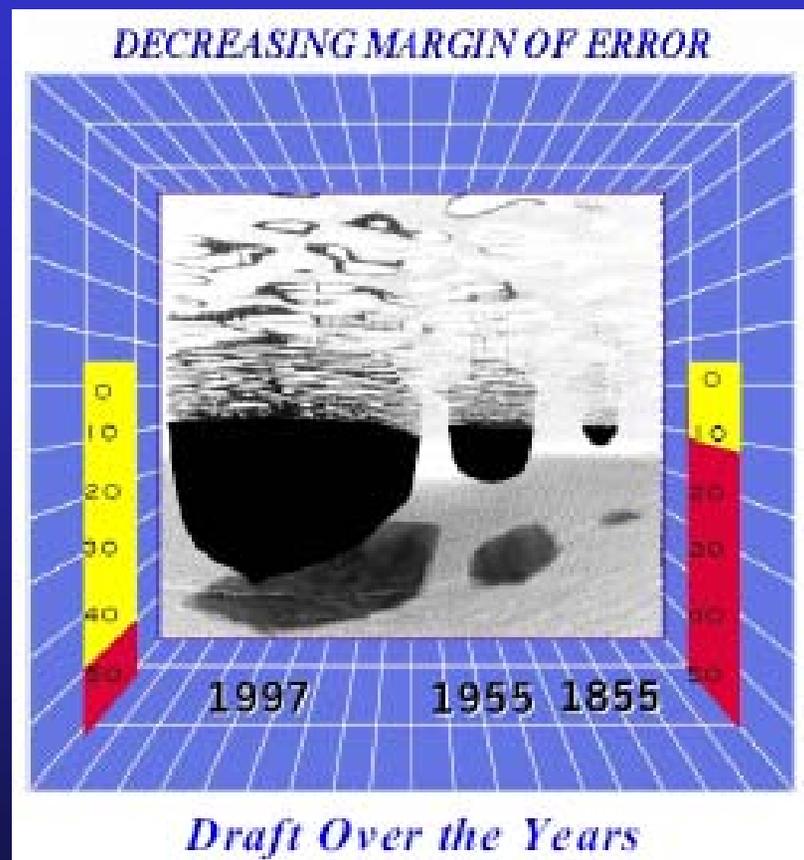
or

[ompl.marine.usf.edu/PORTS](http://ompl.marine.usf.edu/PORTS)

## PORTS<sup>®</sup> are presently operational in 18 locations:

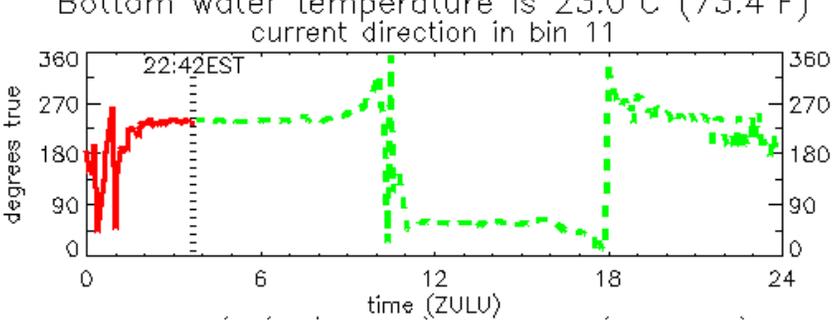
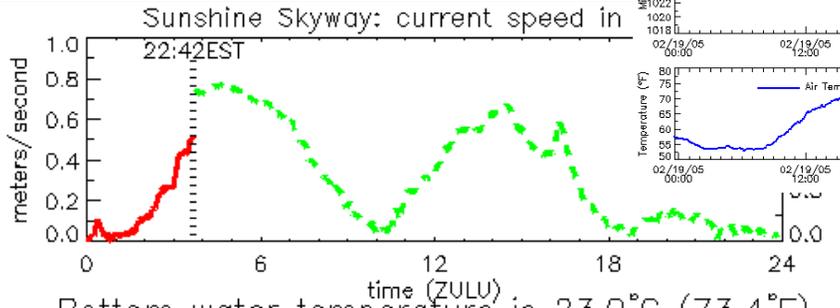
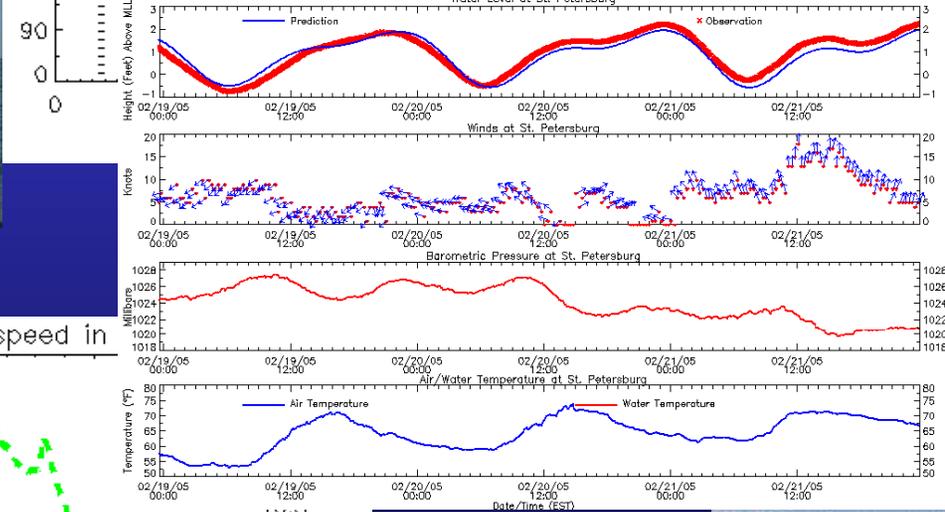
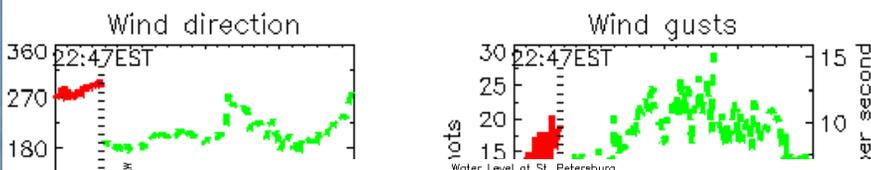
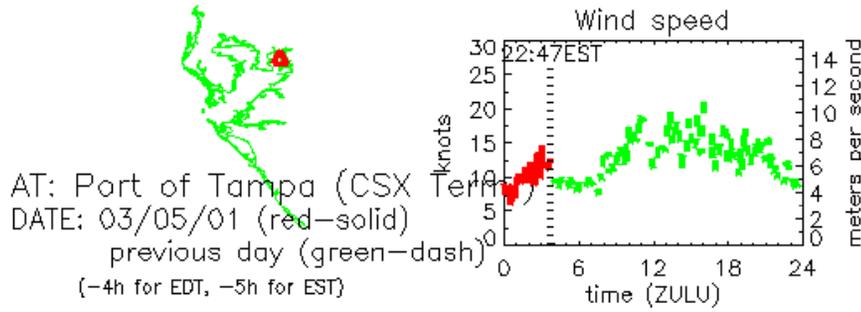
- Narragansett Bay
- Los Angeles/Long Beach
- New Haven, CT
- San Francisco Bay
- New York/New Jersey Harbor
- Lower Columbia River
- Delaware Bay and River
- Tacoma, WA
- Chesapeake Bay
- Anchorage
- Tampa Bay
- Soo Locks, MI
- Houston/Galveston
- Mobile Bay
- Cherry Point
- Sabine Neches
- Pascagoula
- Gulfport

Tampa Bay was the first and still is the most extensive

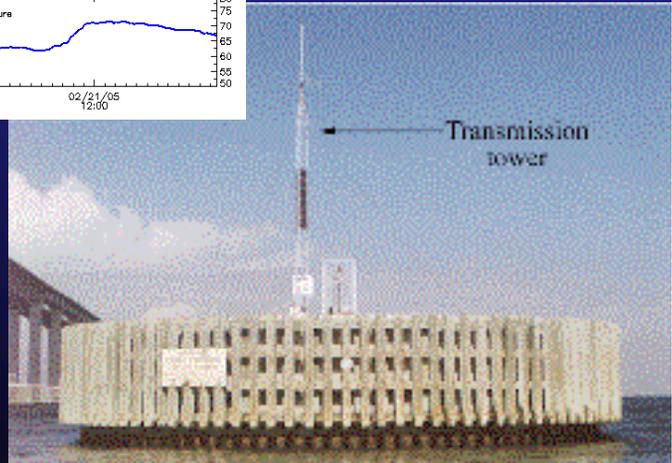
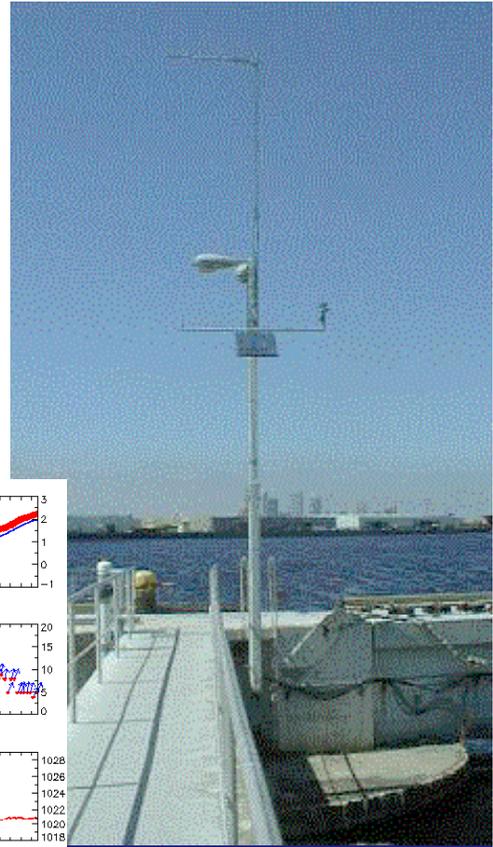


# Uses/Users of PORTS Information

- Safe and Efficient Navigation/Tampa Bay Pilots, Tampa Port Authority, Shipping Agents, USCG
- Hazardous Material Spill Response/FDEP, NOAA-HAZMAT, USCG, Private Sector
- Environmental Protection&Management/FDEP, FWC, EPCHC, Dept. of Health
- Storm Surge Prediction&Mitigation/County Emergency Managers, FDEM
- Red Tide Studies&Prediction/FWC, FDEP
- Fisheries Management/FWC, NMFS
- Sediment Transport Studies & Mitigation/USGS, FDEP, USACOE



**Winds,  
 Currents,  
 Water Level  
 Updated  
 every 6 min**



ADCP transmission tower near the Sunshine Skyway Bridge



Real-Time PORTS Data are integrated into the Tampa Bay Cooperative Vessel Traffic Service (CVTS) and are available on the Web and by voice response

Since PORTS became operational in 1992, ship groundings have decreased by 60%

□[2J

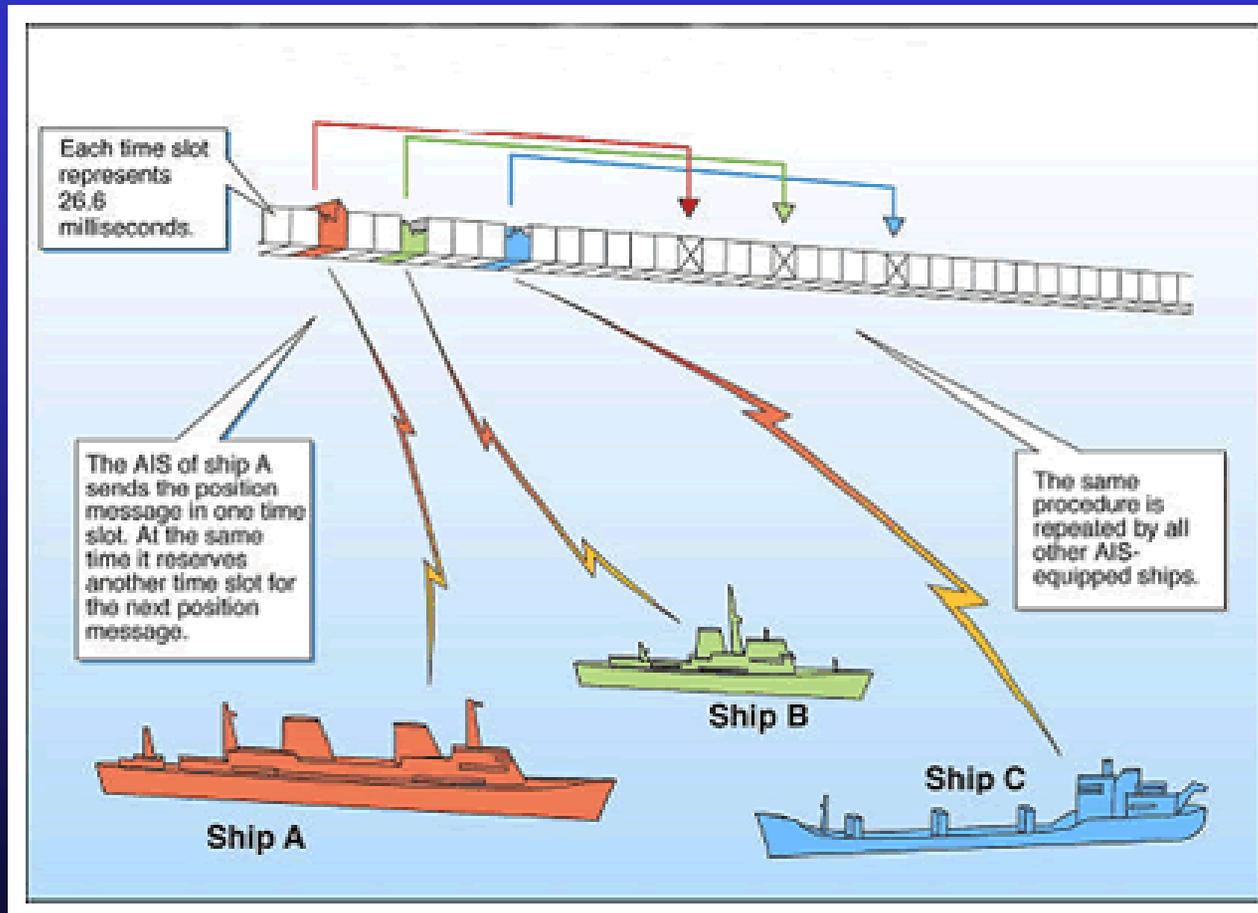
Tampa Bay PORTS, NOAA/NOS at 10:24 pm EDT September 23, 2007

TIDES		CURRENTS	
Port of Tampa	1.1 feet, Rising	:Sunshine Skyway	1.1 kts. (F), 063øT
Port Manatee	1.3 feet, Rising	:Port Manatee Estimated	0.7 kts. (F), 030øT
St. Petersburg	1.1 feet, Rising	:Old Port Tampa	0.9 kts. (F), 029øT
Old Port Tampa	1.0 feet, Rising	: (F)lood, (S)lack, (E)bb, towards øTrue	
METEOROLOGICAL		WATER TEMPERATURE	
C-Cut	9 knots from NE , gusts to 10	:	Sunshine Skyway
Port of Tampa	4 knots from NE , gusts to 6	:	83øF
Port Manatee	3 knots from ENE, gusts to 5	:	Old Port Tampa
St. Petersburg	3 knots from NNE, gusts to 7	:	84øF
Old Port Tampa	Calm	:	St. Petersburg
Seabulk	4 knots from NNE, gusts to 5	:	86øF
Berth 223	5 knots from NNE, gusts to 6	:	
TPA Terminal 2	3 knots from N , gusts to 4	:	
		:	
		:	



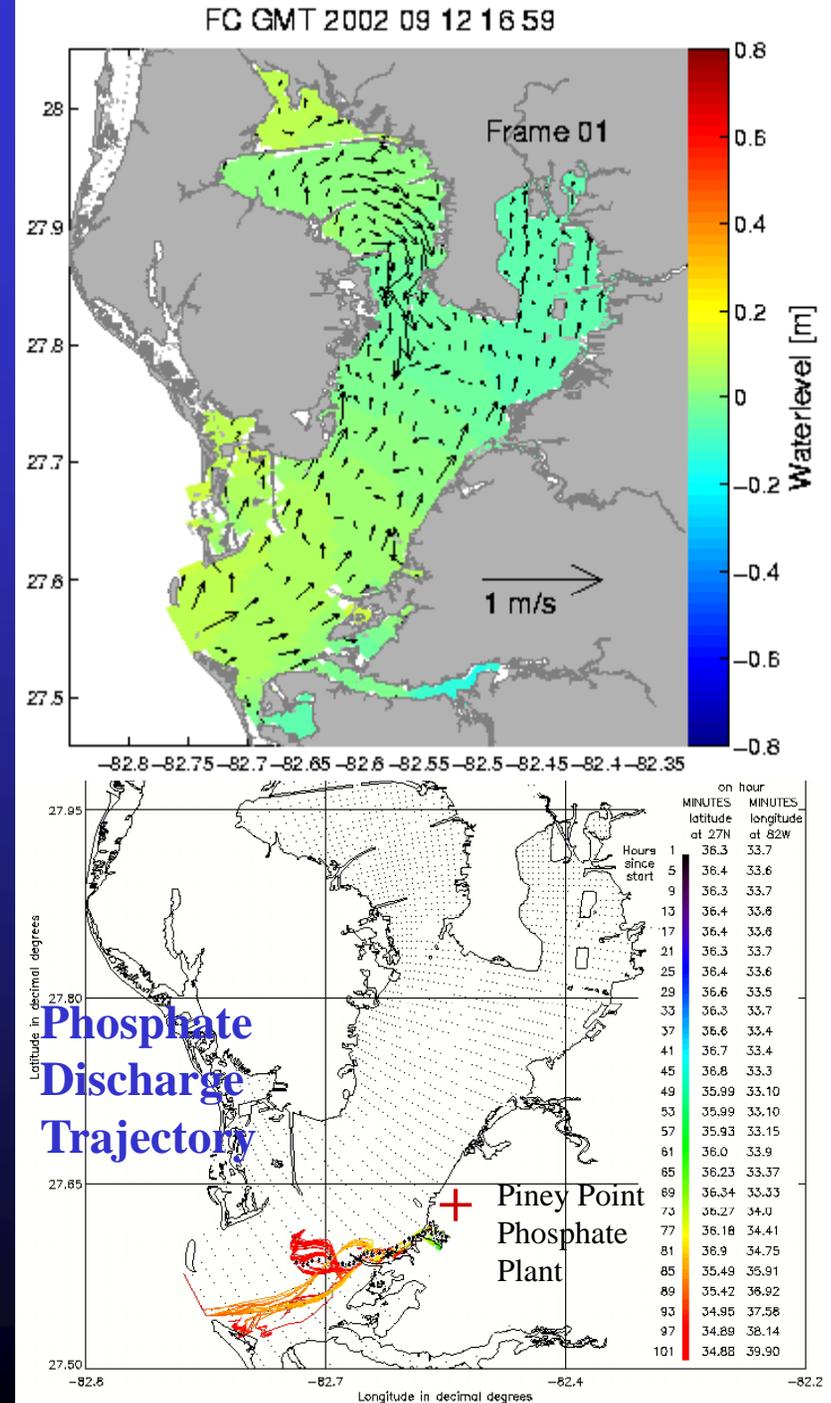
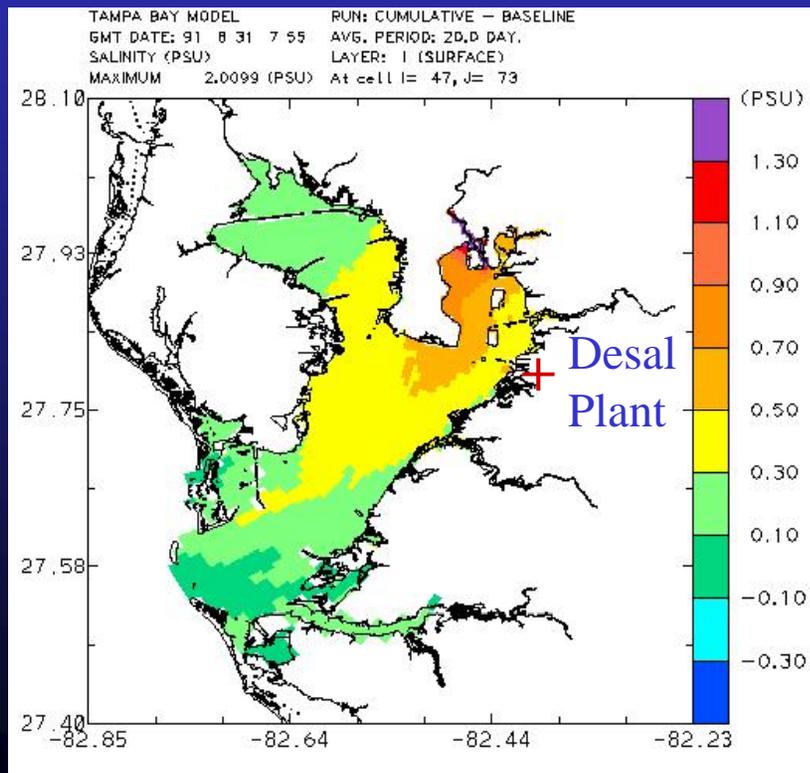
Conservative estimates of annual benefits exceed operating costs by at least 25 to 50 times

# TB-PORTS data are being incorporated into the Automated ID System (AIS) binary message stream and broadcast from the CVTS base station

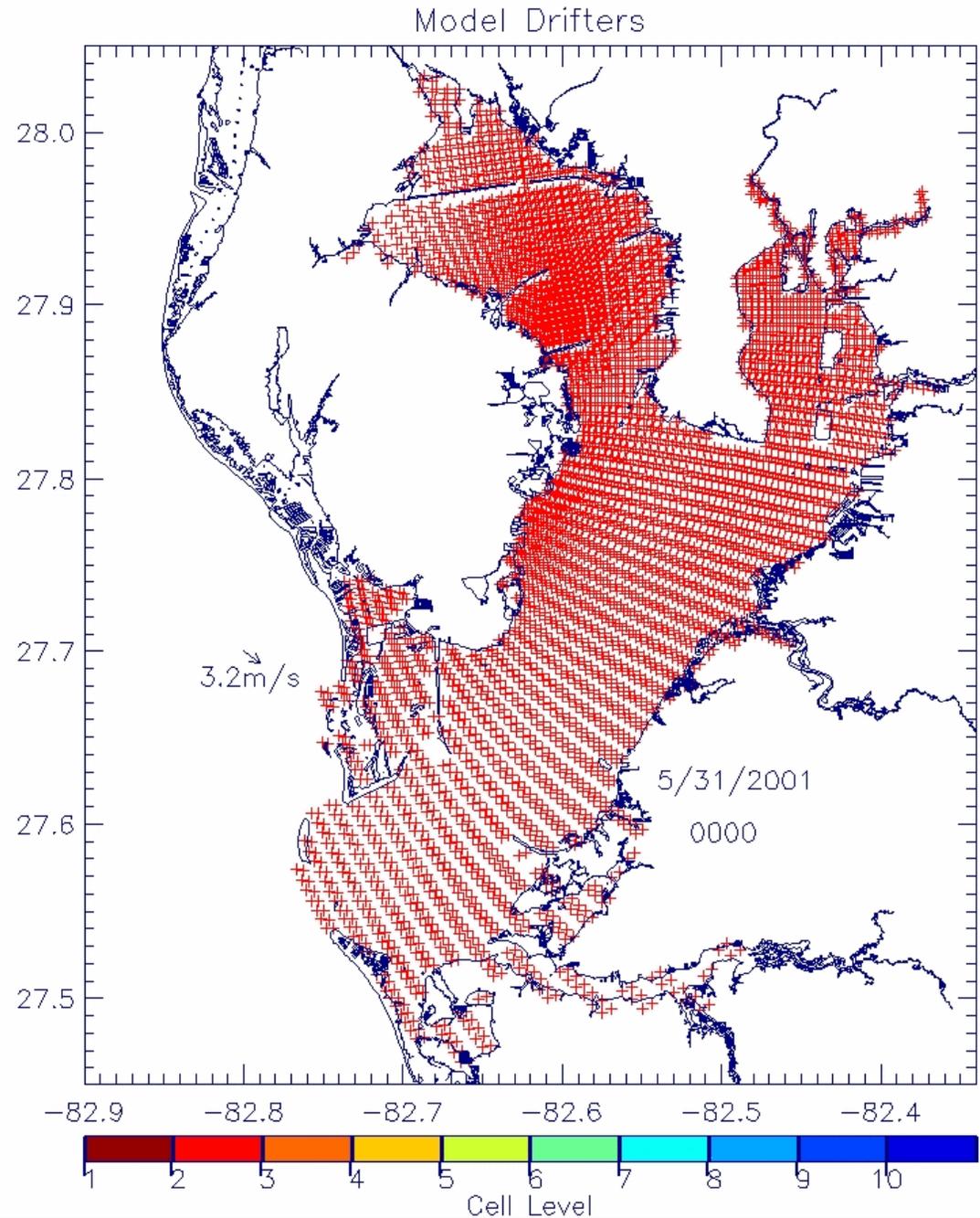


See <http://www.navcen.uscg.gov/enav/ais/default.htm>

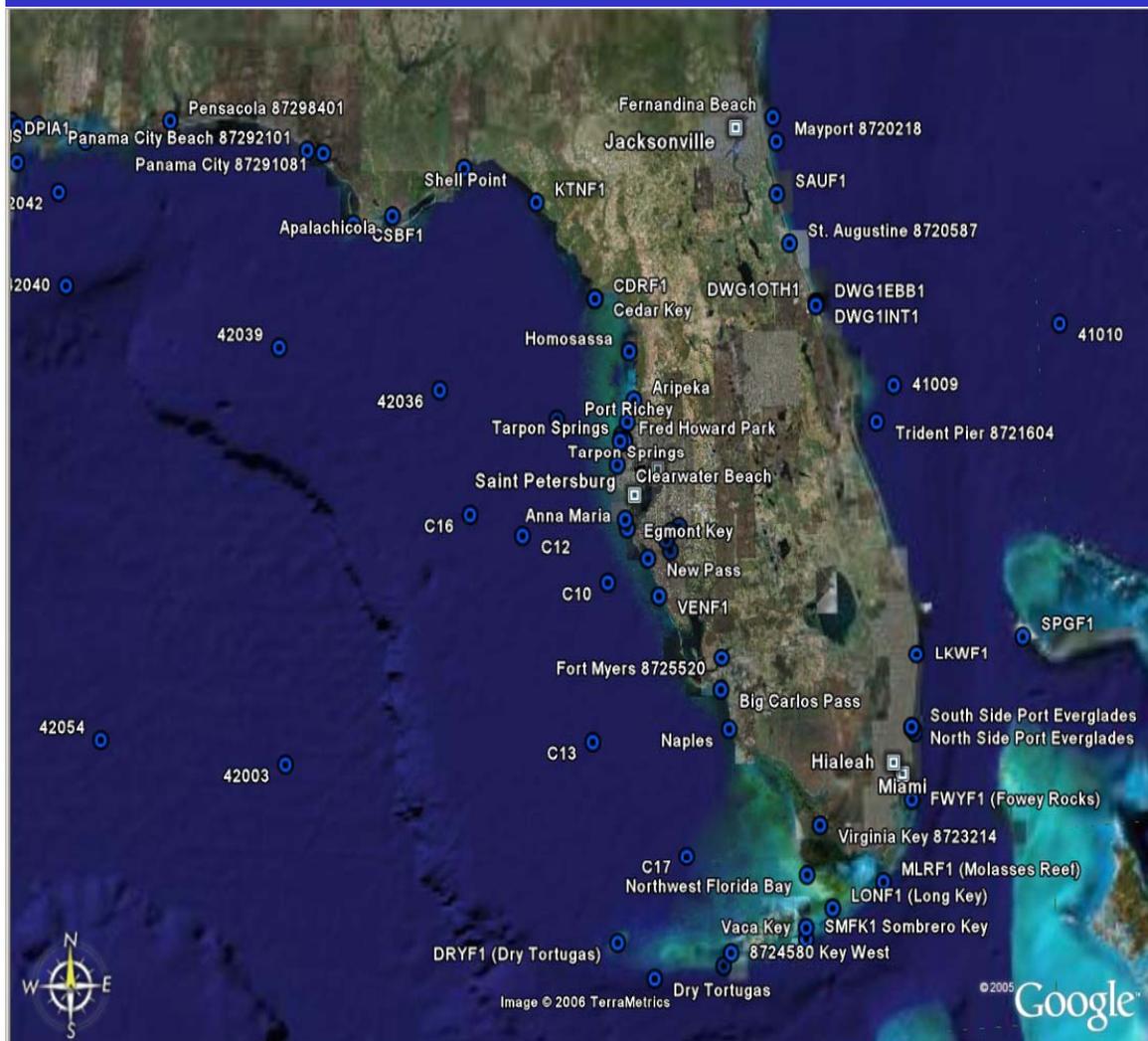
Real-time observations are combined with a model of currents and water level to provide a predictive capability for storm surge prediction and mitigation, search and rescue, environmental management/permitting, and hazardous material spills



**Modeled trajectories of passive particles are used to track transport and fate of human pathogens and shellfish larvae**



# Coastal Ocean Monitoring and Prediction System (COMPS)



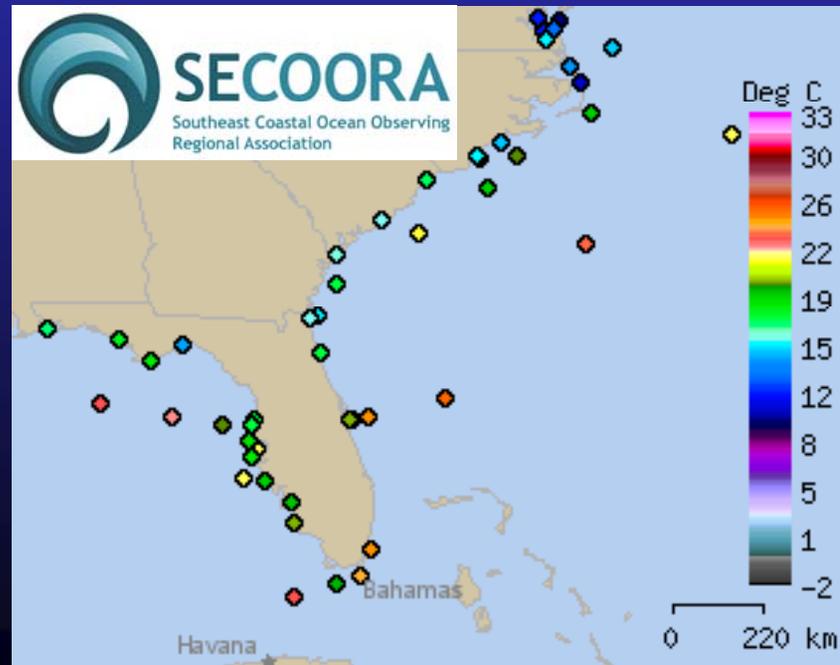
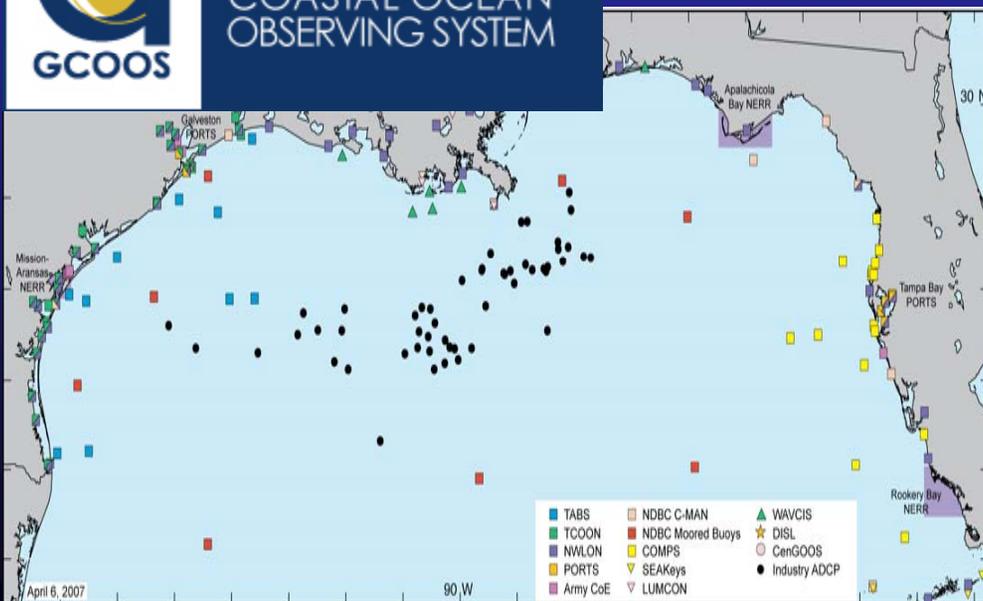
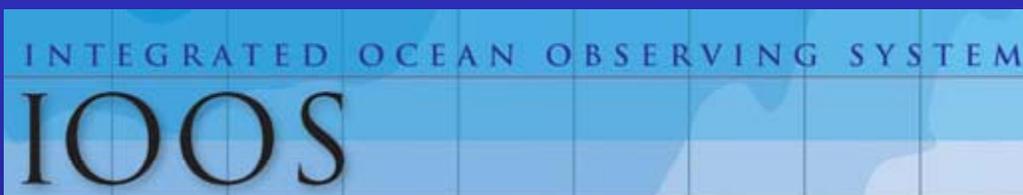
Real-time data from offshore buoys, coastal towers, HF radars merged with models and satellite observations

COMPS observations are available thru NDBC

<http://comps.marine.usf.edu> or <http://ndbc.noaa.gov/Maps/Florida.shtml>

# Observing Systems in Florida are building blocks of both the Southeast Coastal Ocean Observing Regional Association (SECOORA) and the Gulf of Mexico Coastal Ocean Observing System (GCOOS), regional contributions to the US Integrated Ocean Observing System.

see <http://usnfra.org>



NATIONAL CENTER FOR



MARITIME AND  
PORT SECURITY

**The Tampa Bay Coastal Ocean Prediction System will form the base layers for a prototype Comprehensive Maritime Domain Awareness System under development by USF and SRI International as a core activity of the recently-formed National Center for Maritime and Port Security**