

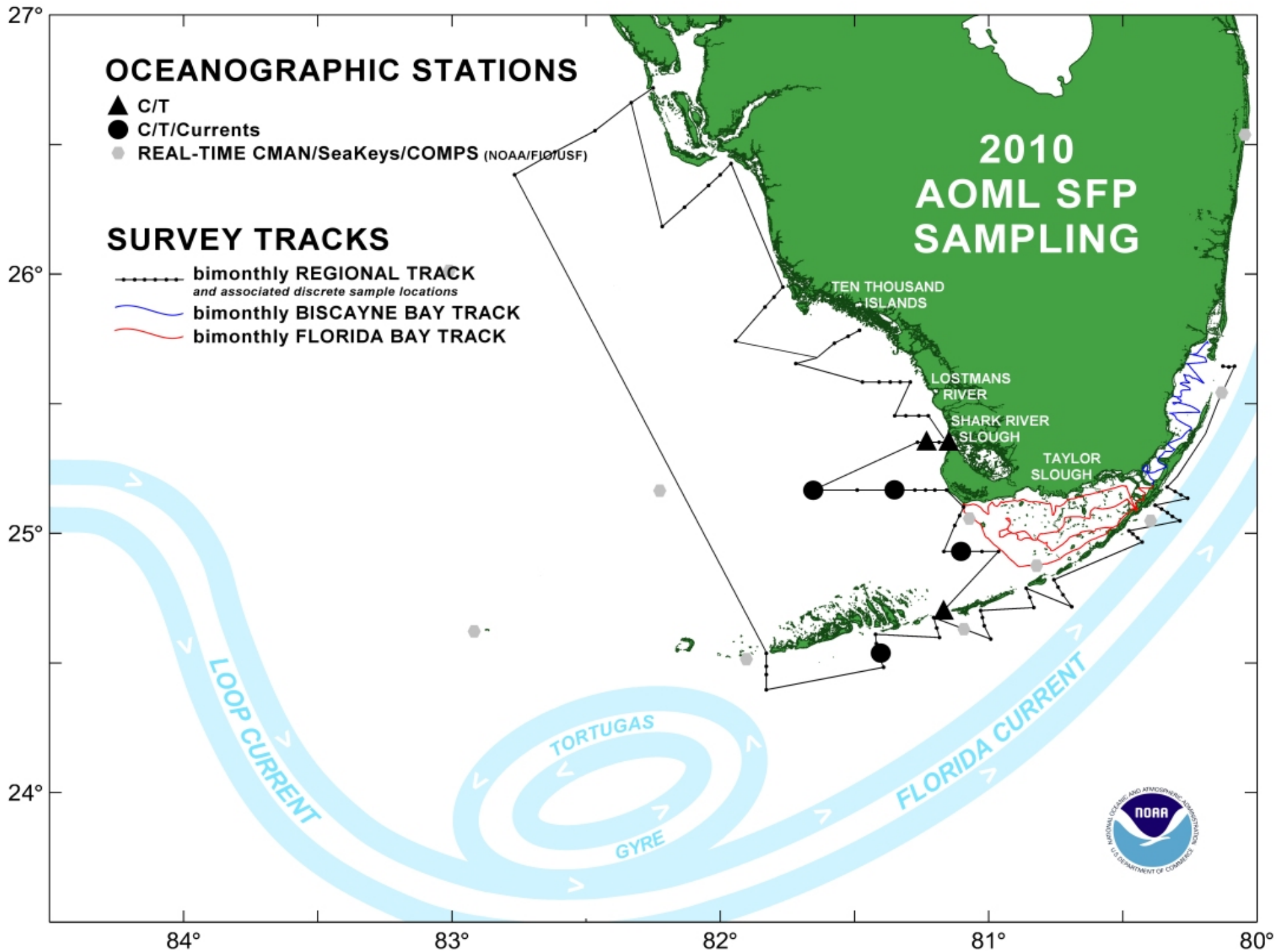
***Sea surface temperature, salinity, and chlorophyll  
variability in the  
Florida Keys and surrounding coastal waters:  
Means, seasonal patterns, interannual variability,  
and extreme events***

***Elizabeth M. Johns, Christopher R. Kelble, Thomas N. Lee,  
Nelson Melo, Peter B. Ortner, and Ryan H. Smith***

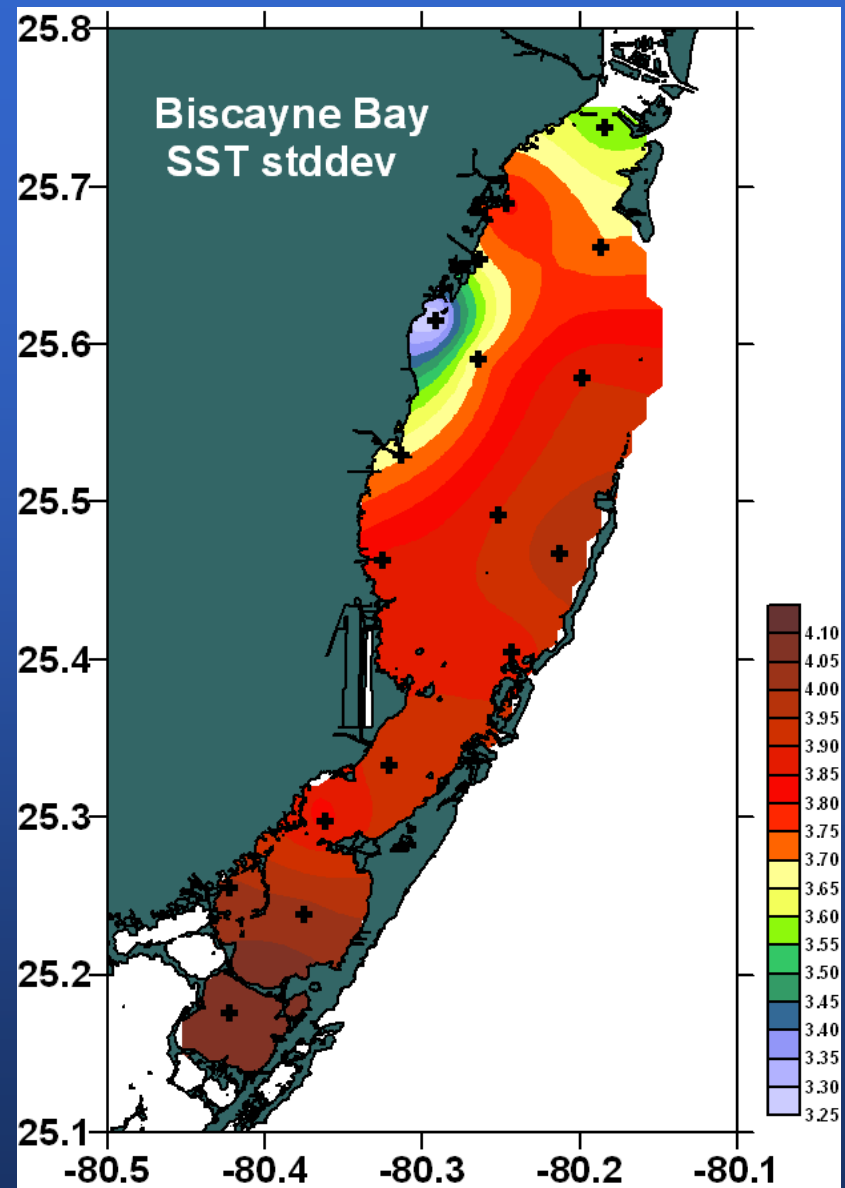
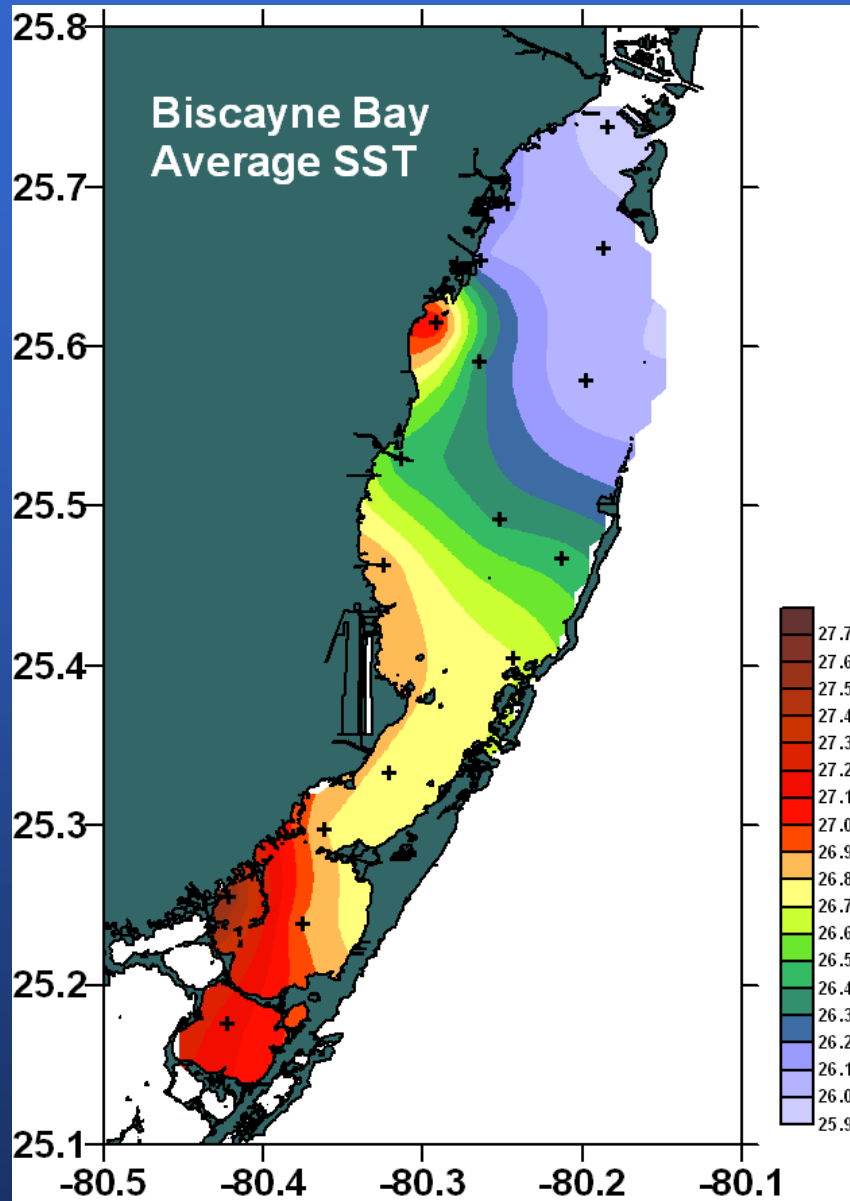
***<sup>1</sup>Atlantic Oceanographic and Meteorological Laboratory,  
National Oceanic and Atmospheric Administration, Miami, FL, USA***

***<sup>2</sup>Cooperative Institute for Marine and Atmospheric Studies,  
University of Miami, Miami, FL, USA***

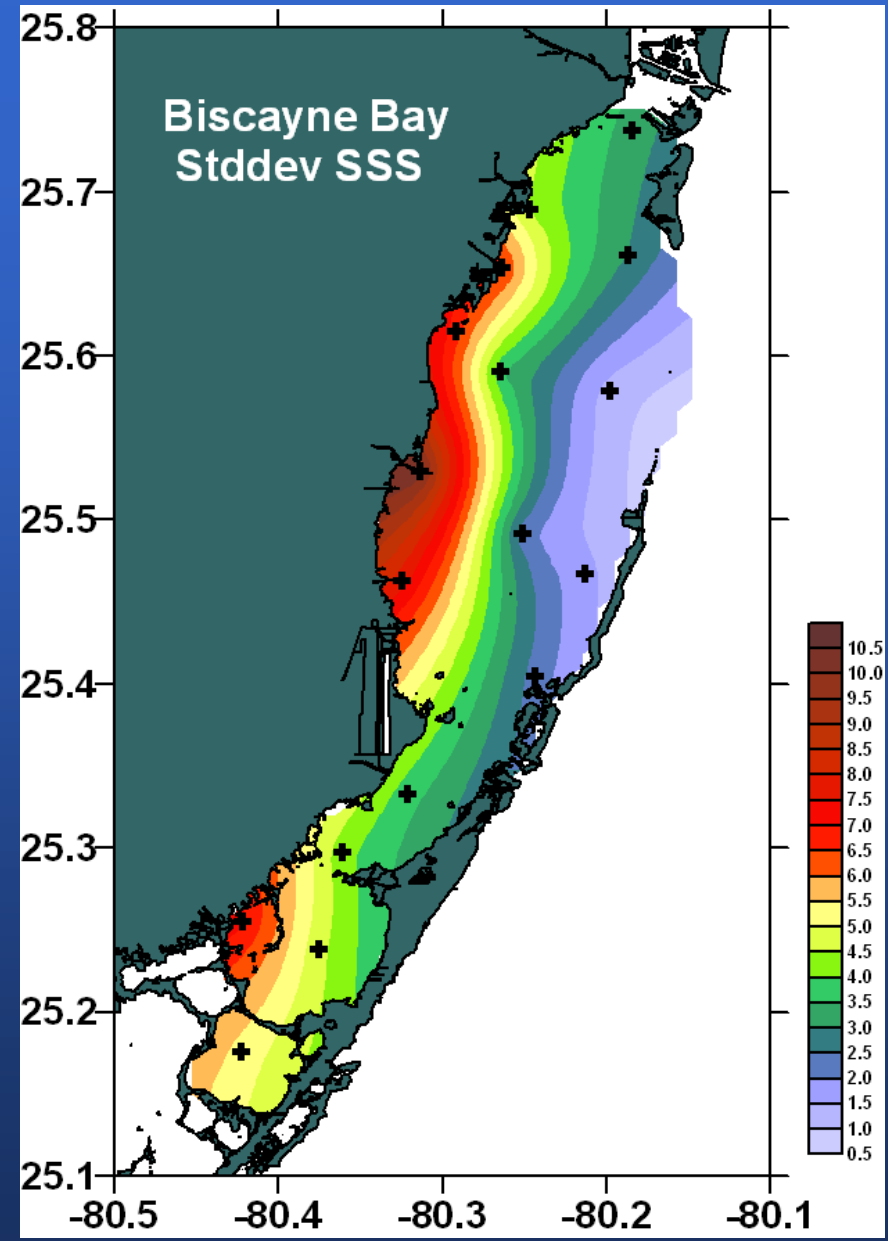
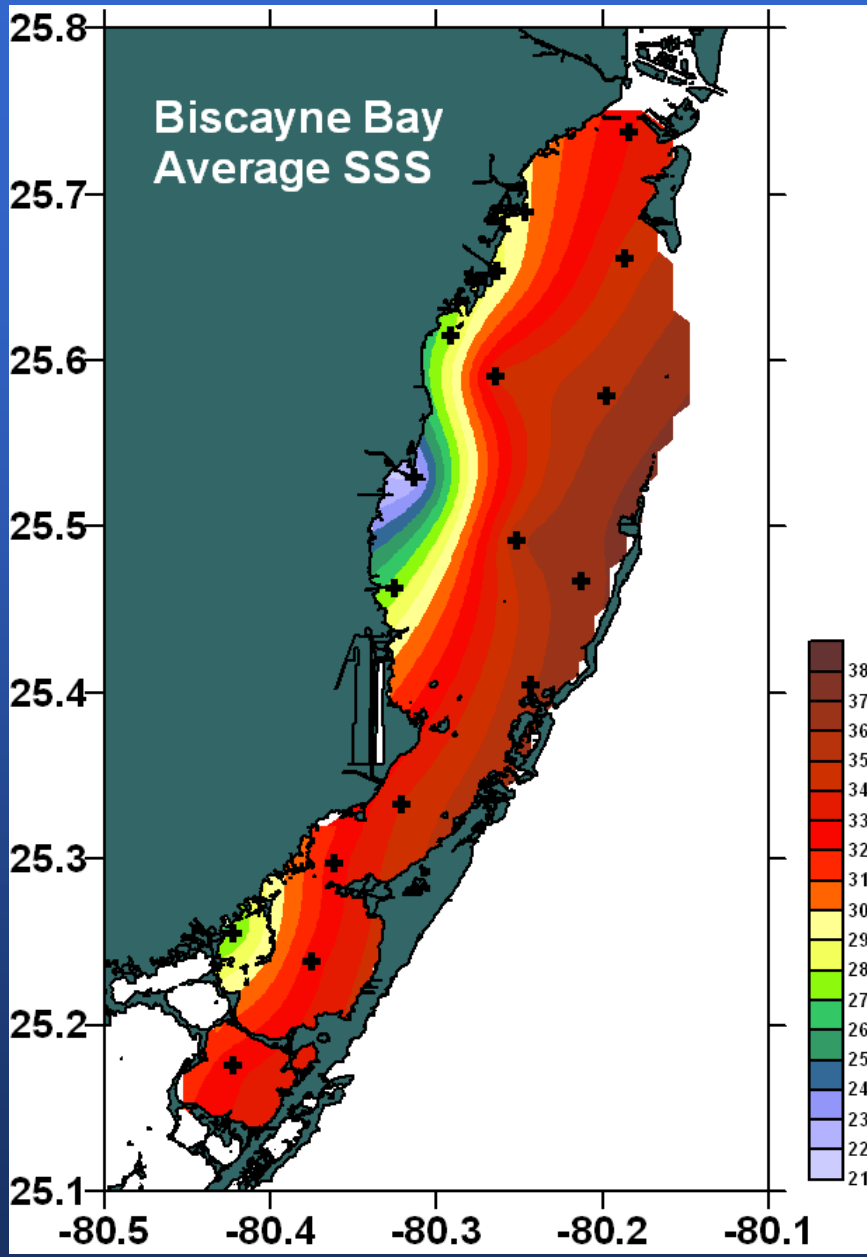
***<sup>3</sup>Rosenstiel School of Marine and Atmospheric Science,  
University of Miami, Miami, FL, USA***



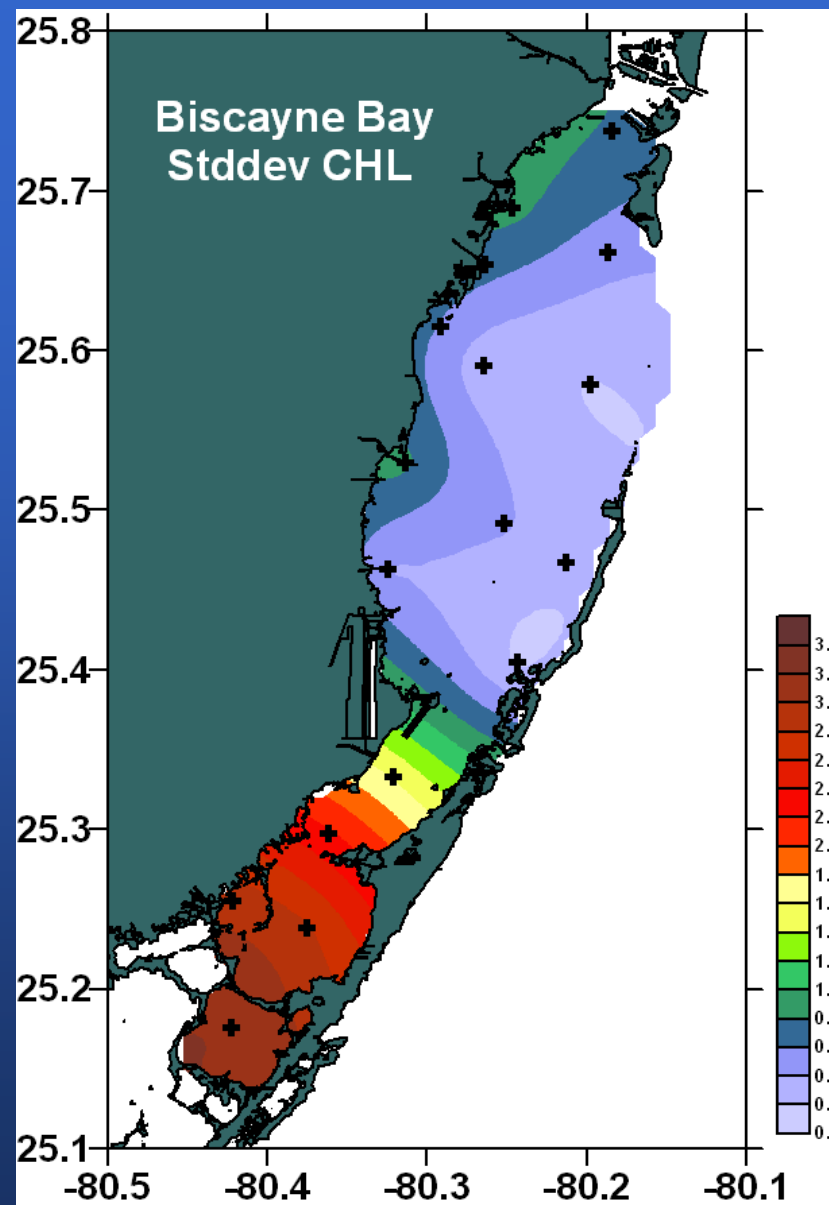
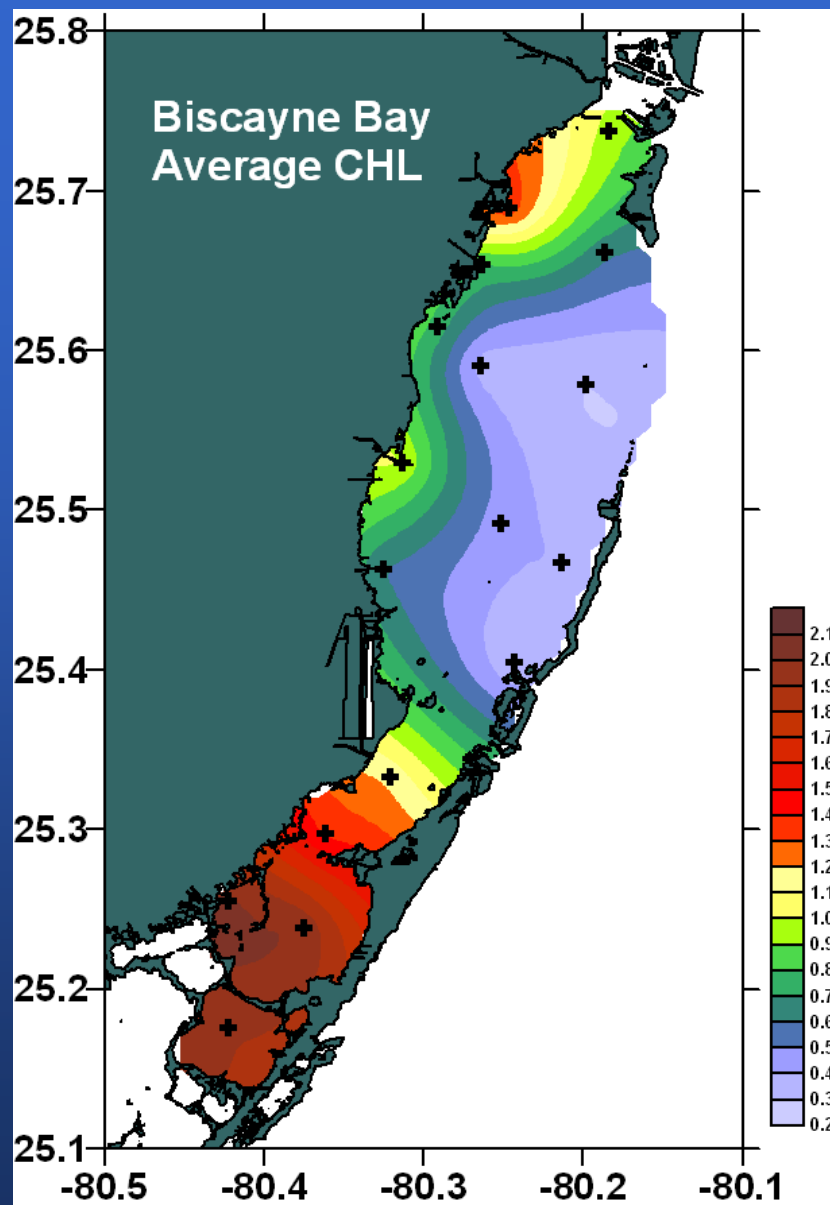
# *Mean property distributions*



**Biscayne Bay Sea Surface Temperature**

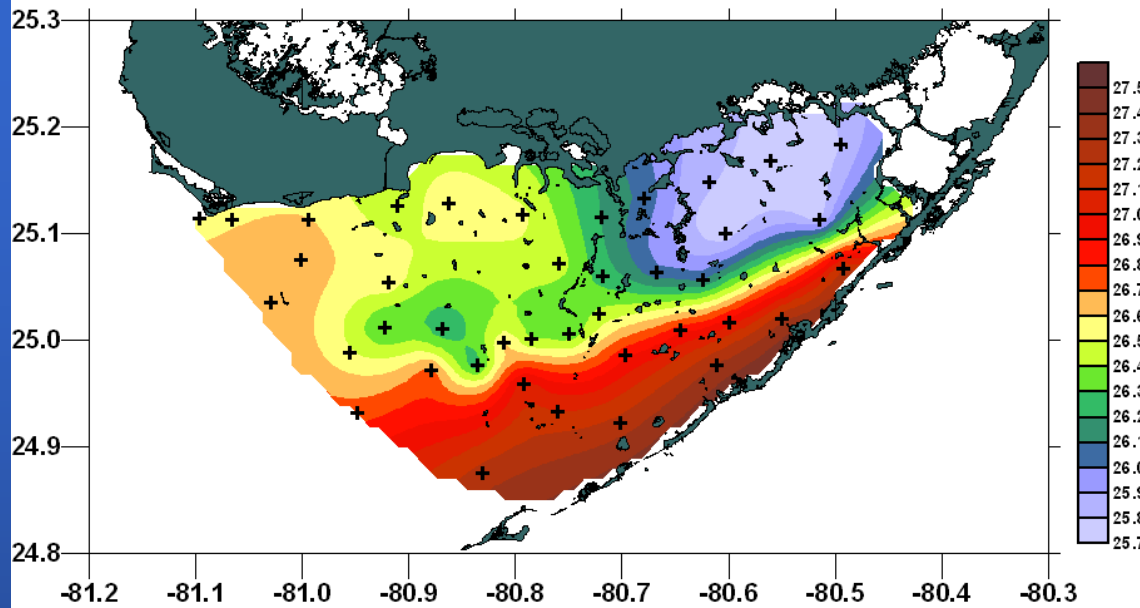


**Biscayne Bay Surface Salinity**



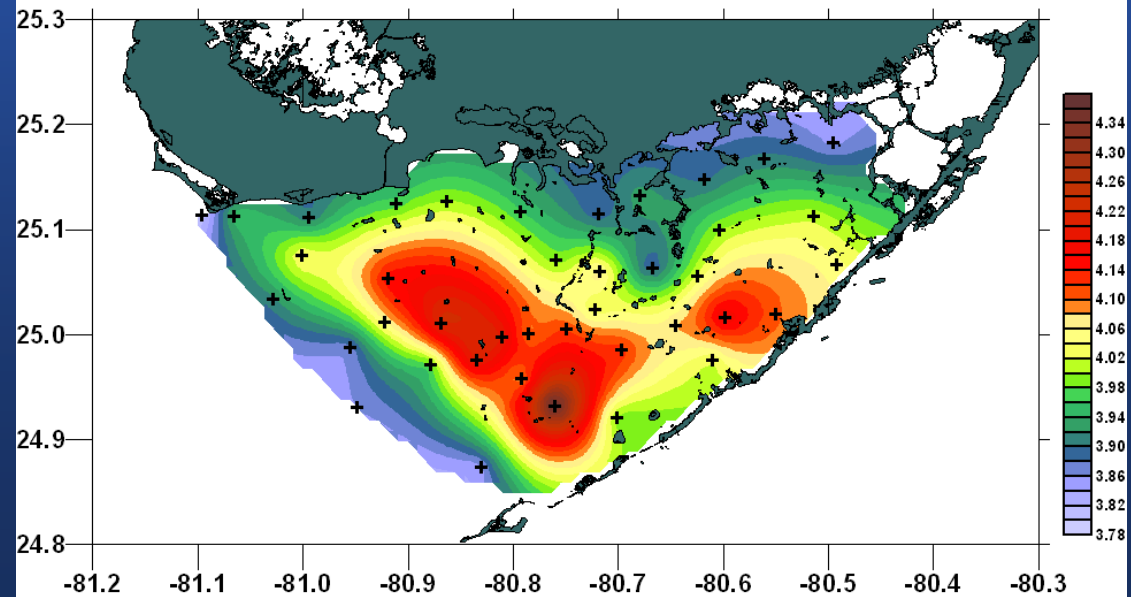
**Biscayne Bay Surface Chlorophyll**

**FLORIDA BAY Average SST**



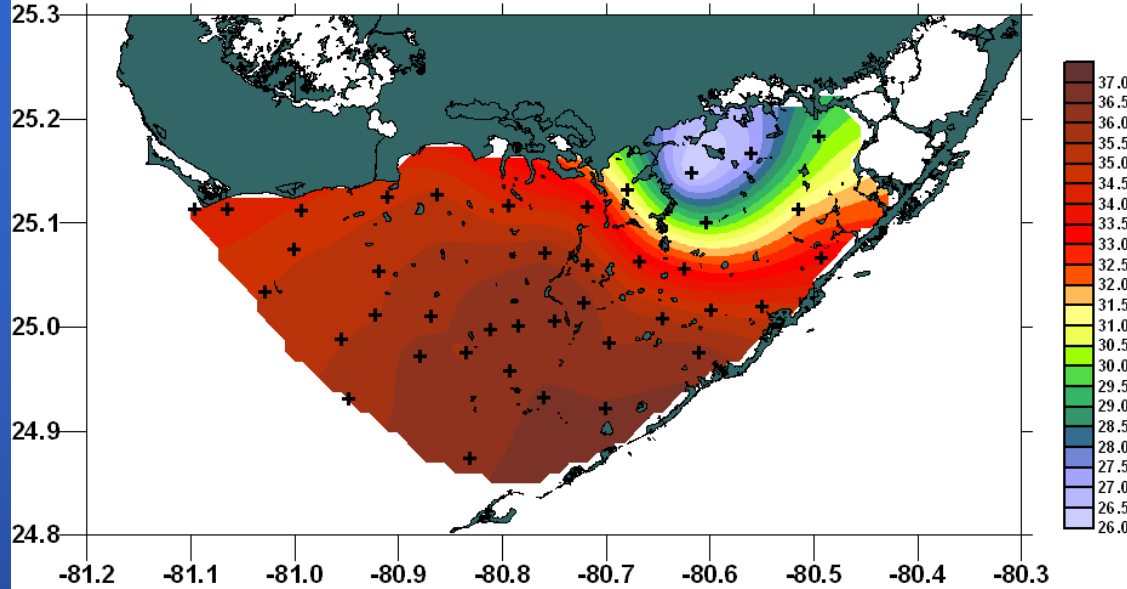
# Florida Bay SST

**Stddev of SST**

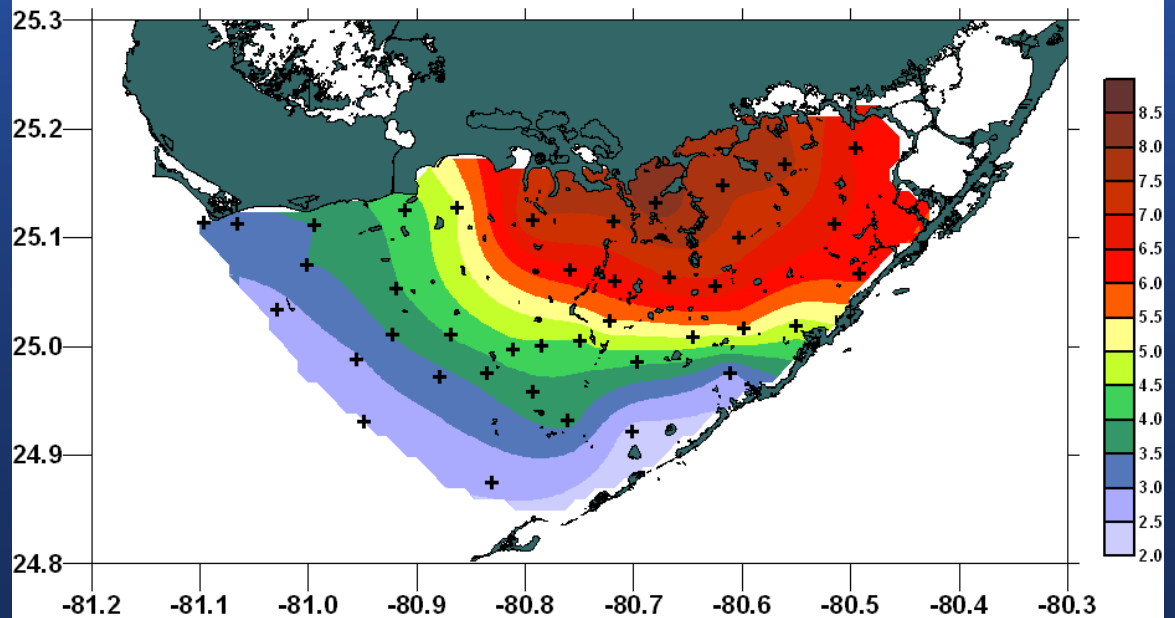


# Florida Bay SSS

### Average SSS

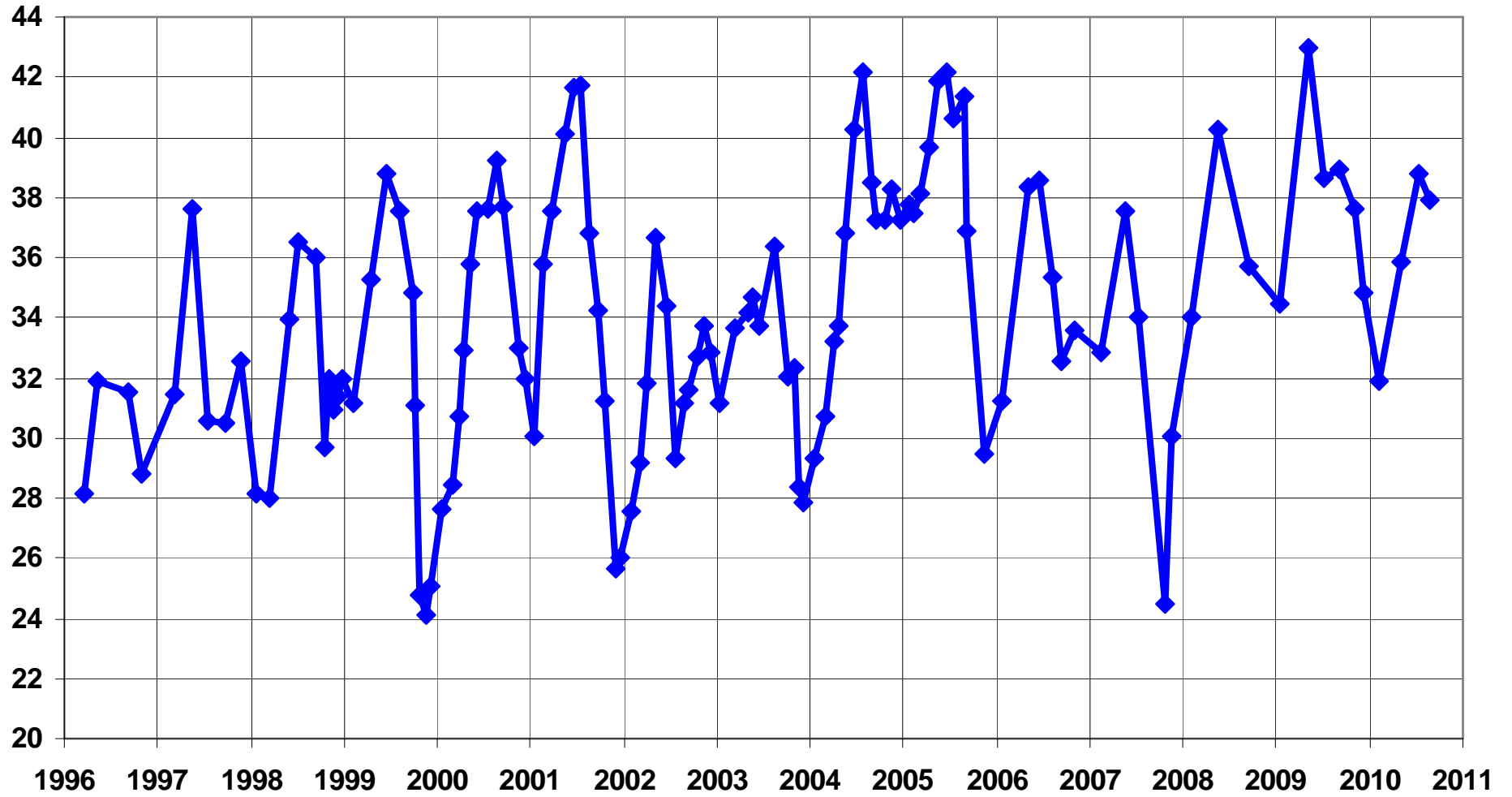


### Stddev of SSS



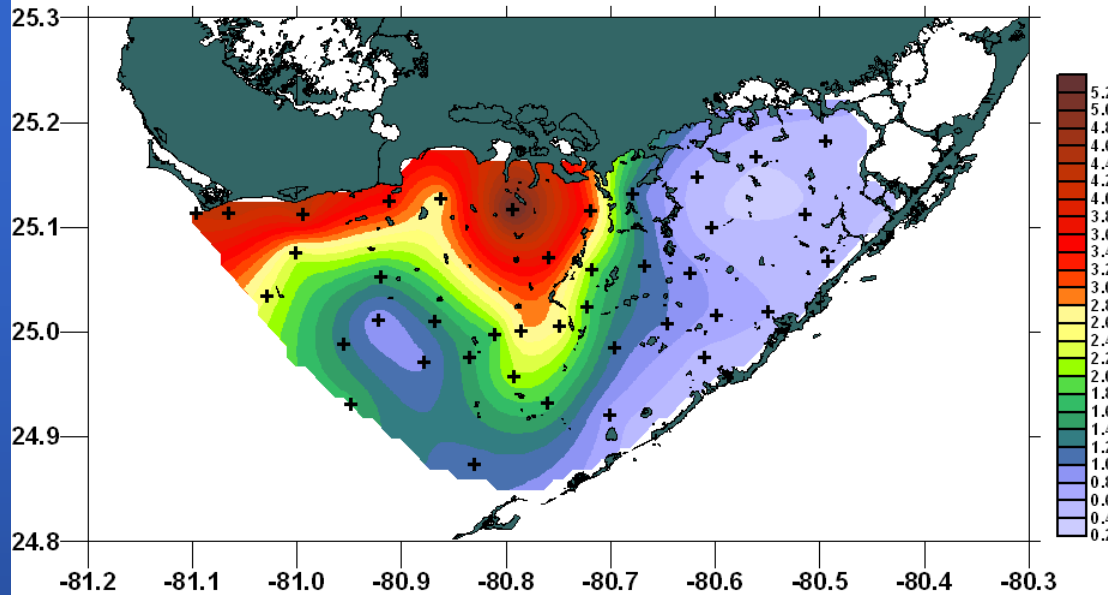


## FLORIDA BAY AVERAGE SSS



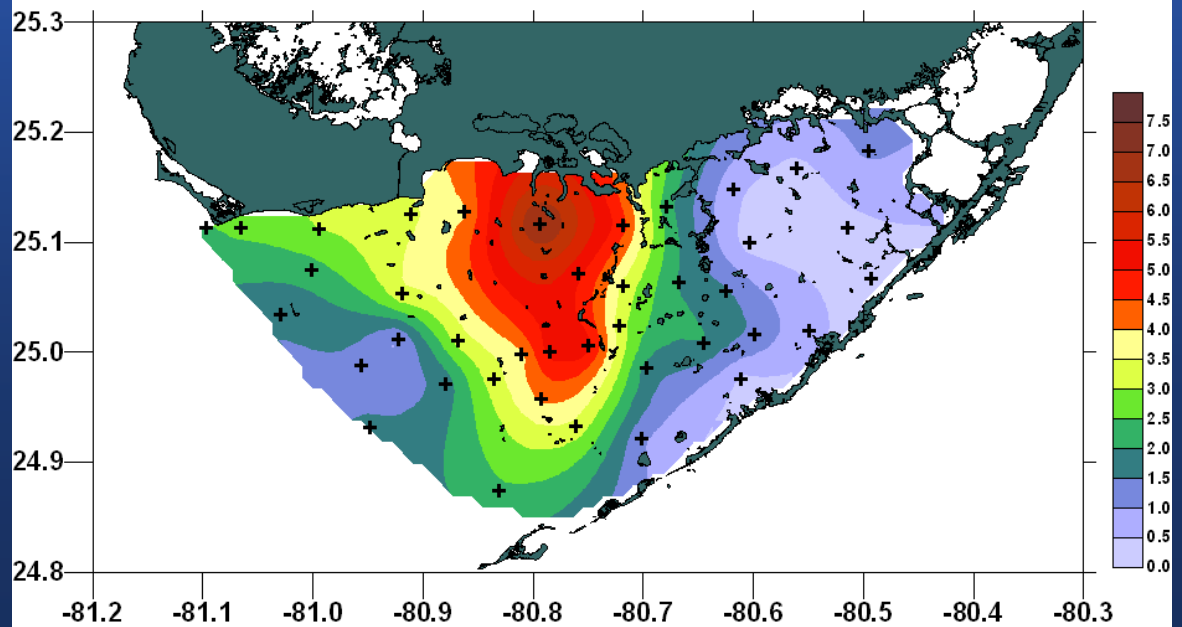
**Average SSS in Florida Bay**

**Average CHL**

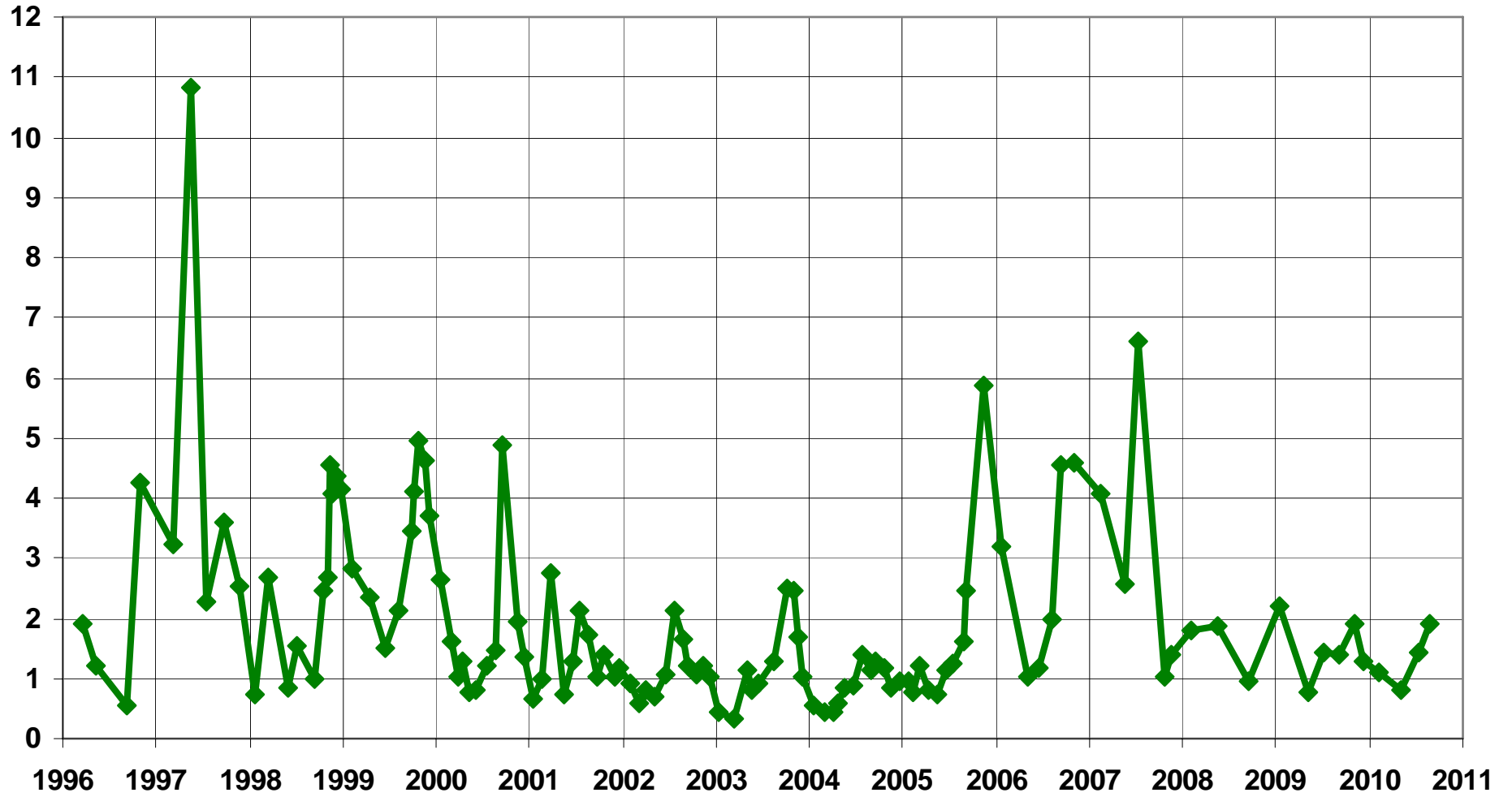


# Florida Bay CHL

**Stddev of CHL**

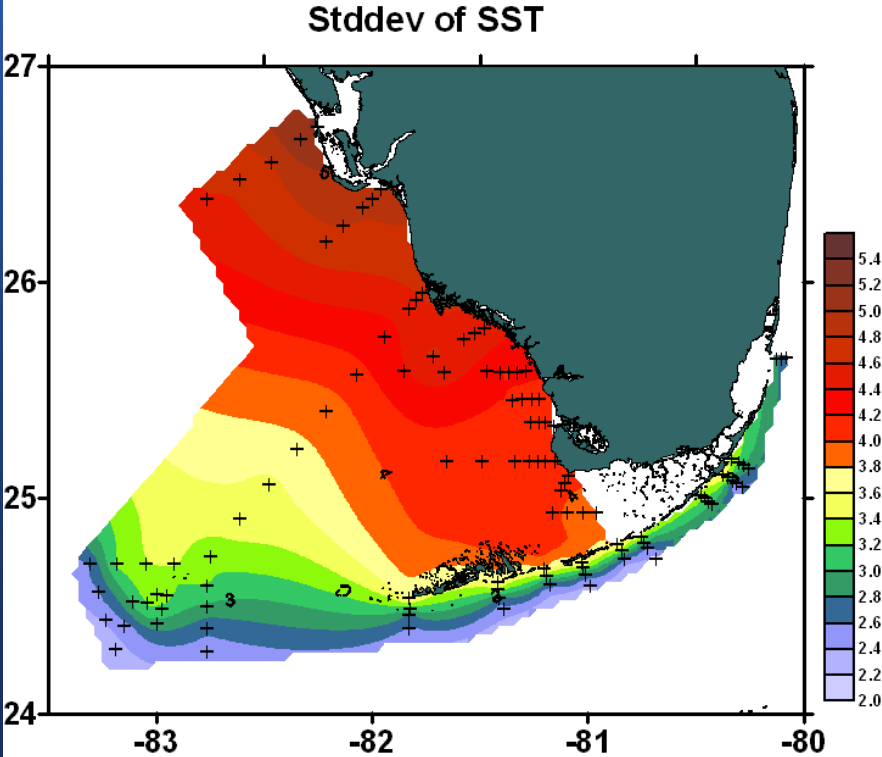
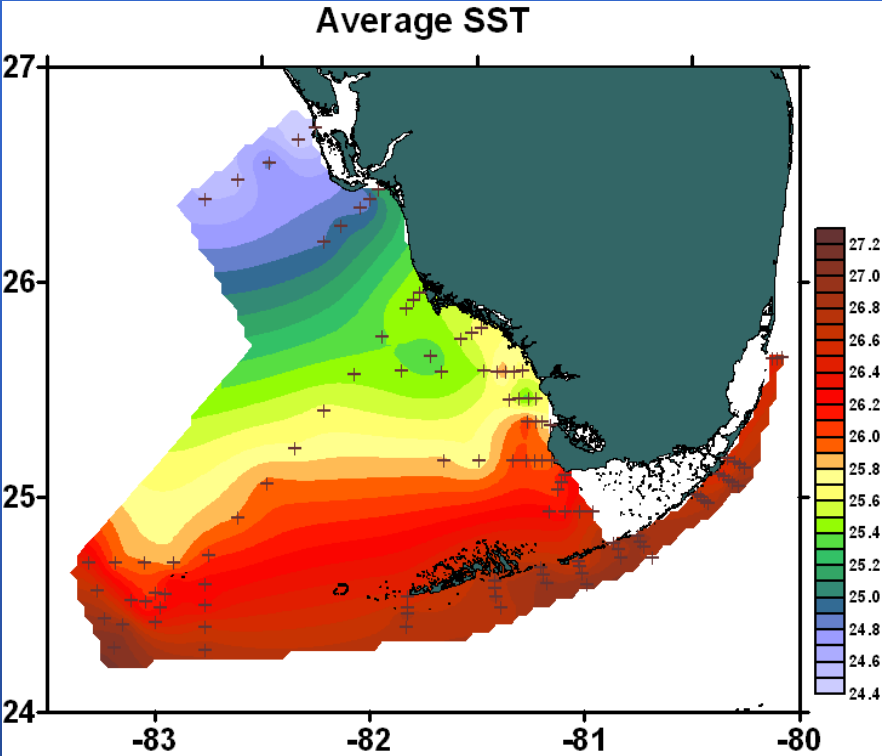


## FLORIDA BAY AVERAGE CHL

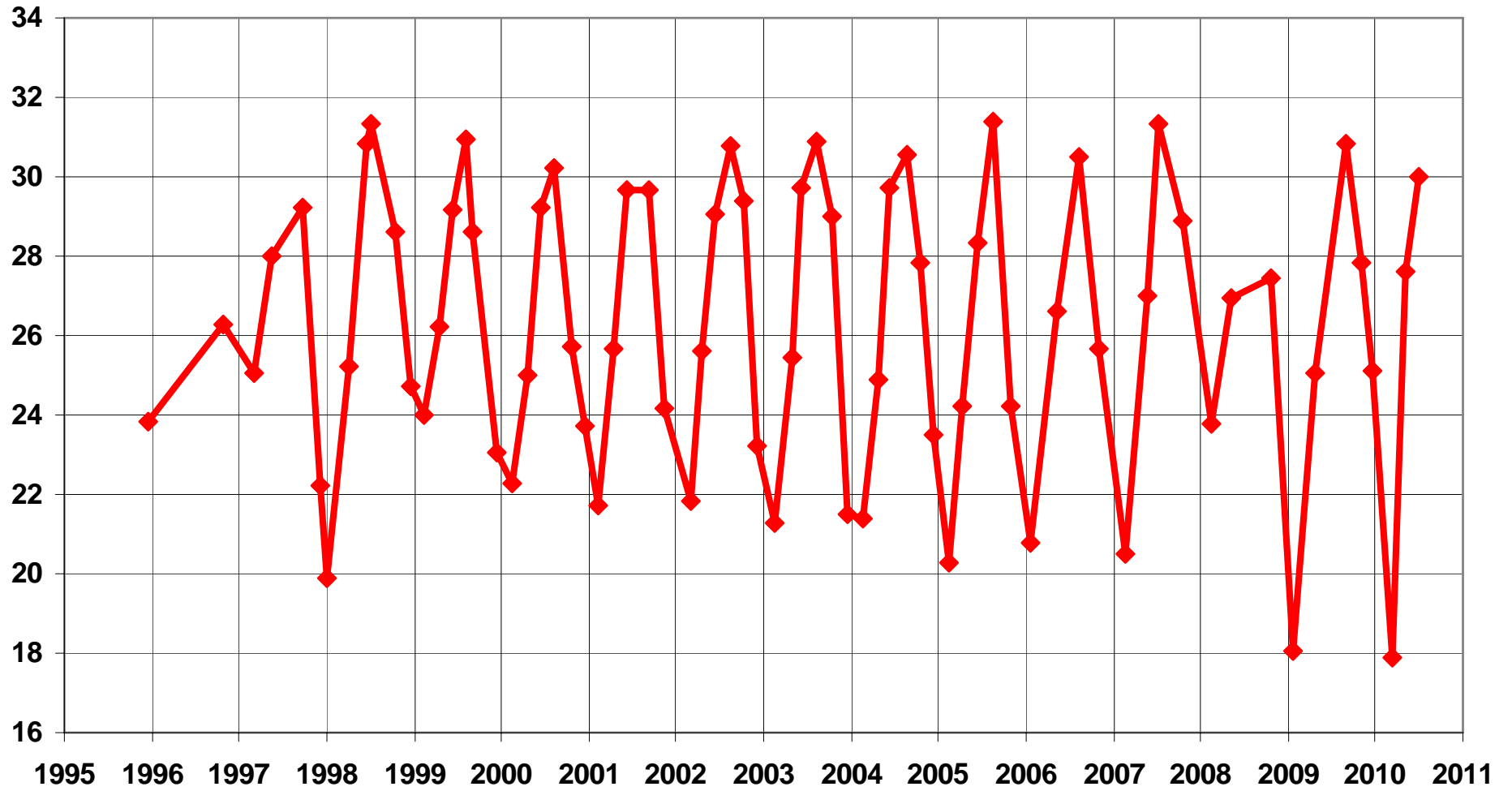


Average CHL in Florida Bay

# South Florida SST

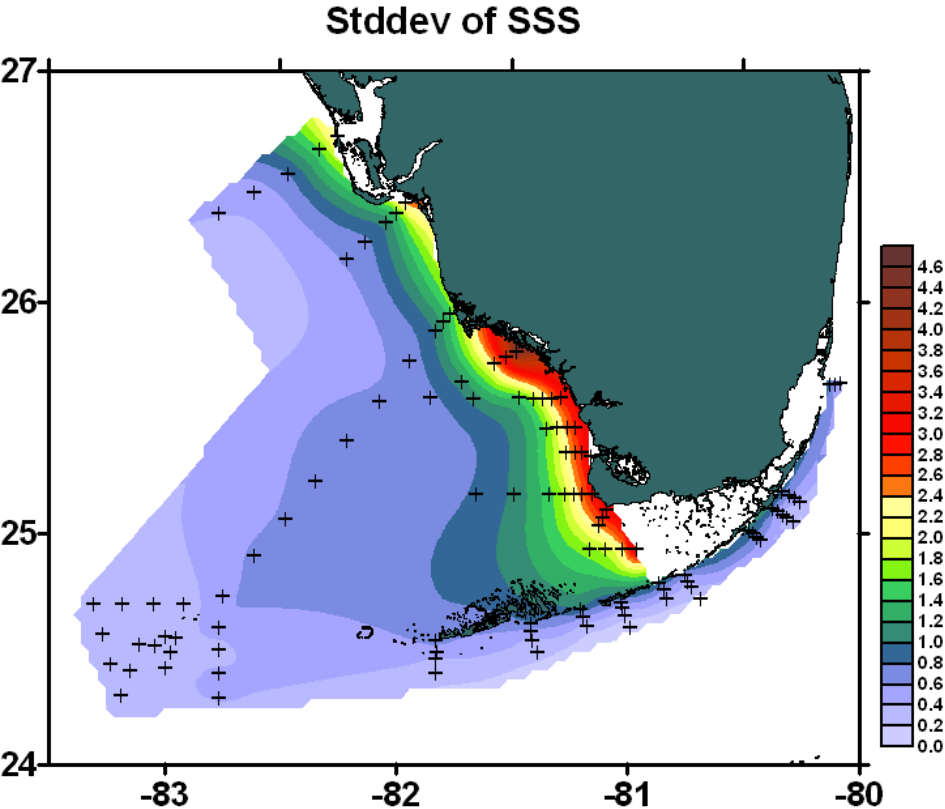
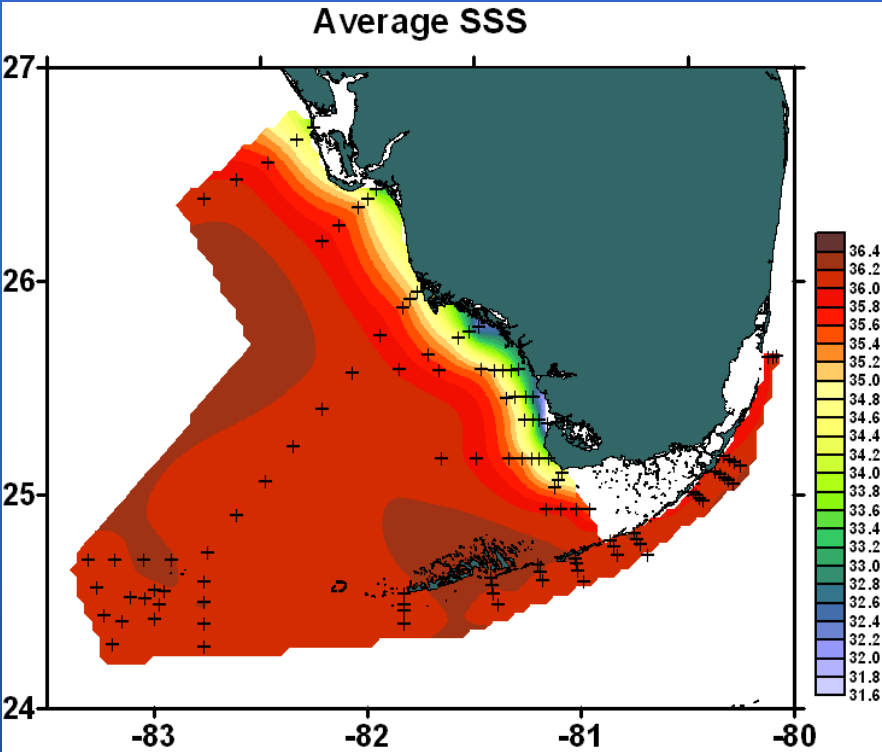


## SOUTH FLORIDA AVERAGE SST

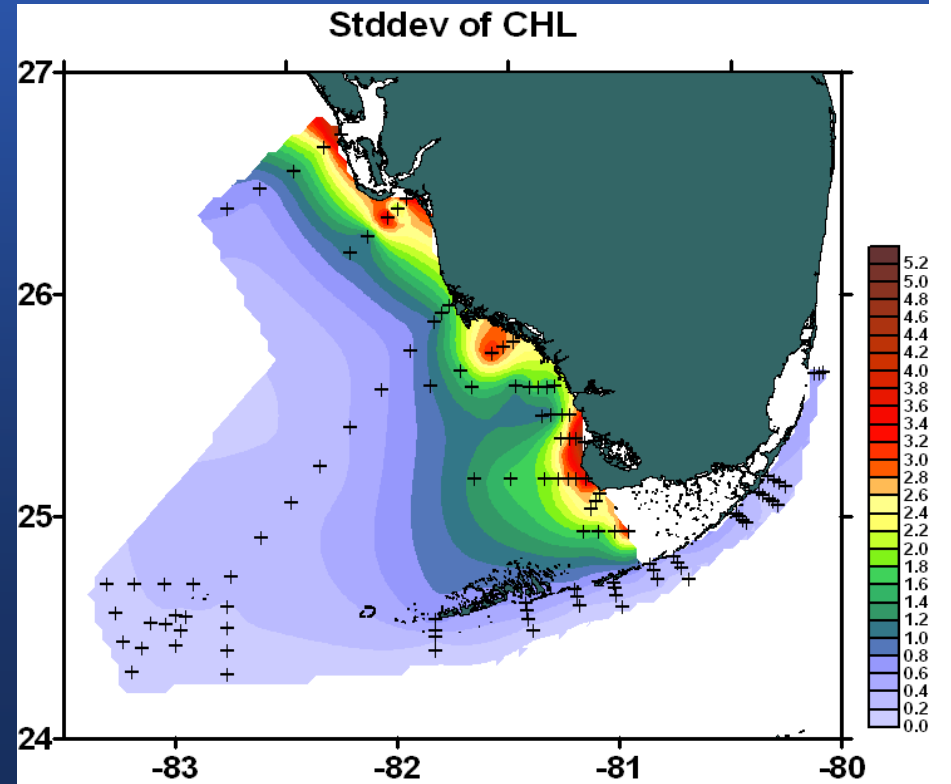
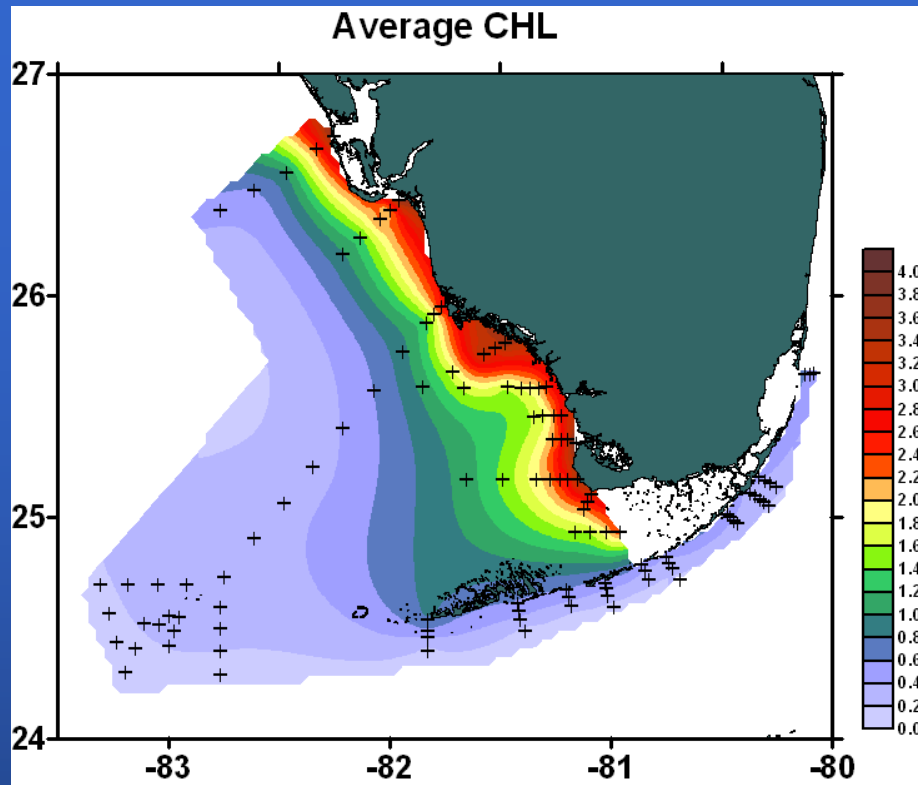


**Average SST in South Florida**

# South Florida SSS

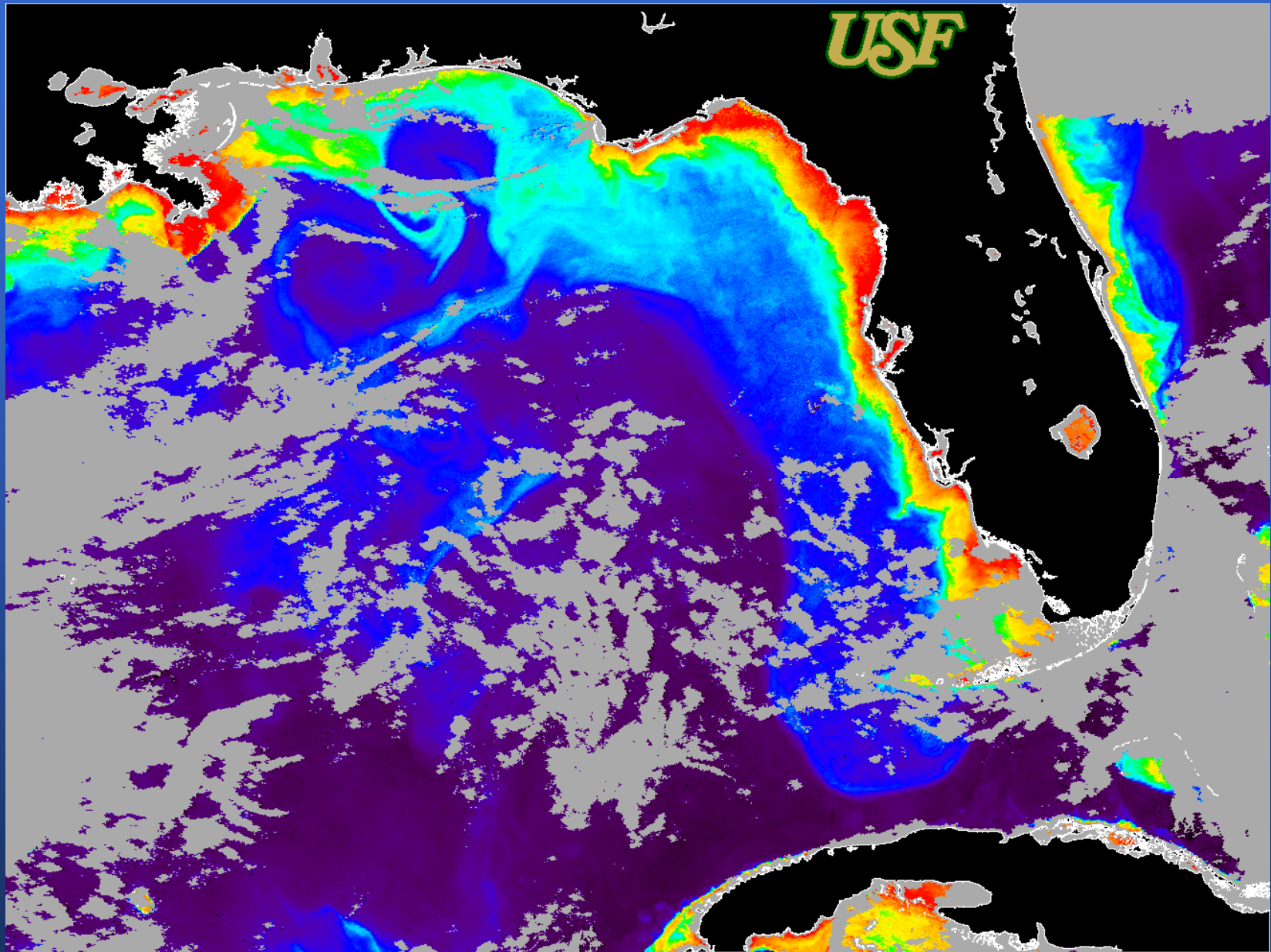


# South Florida CHL

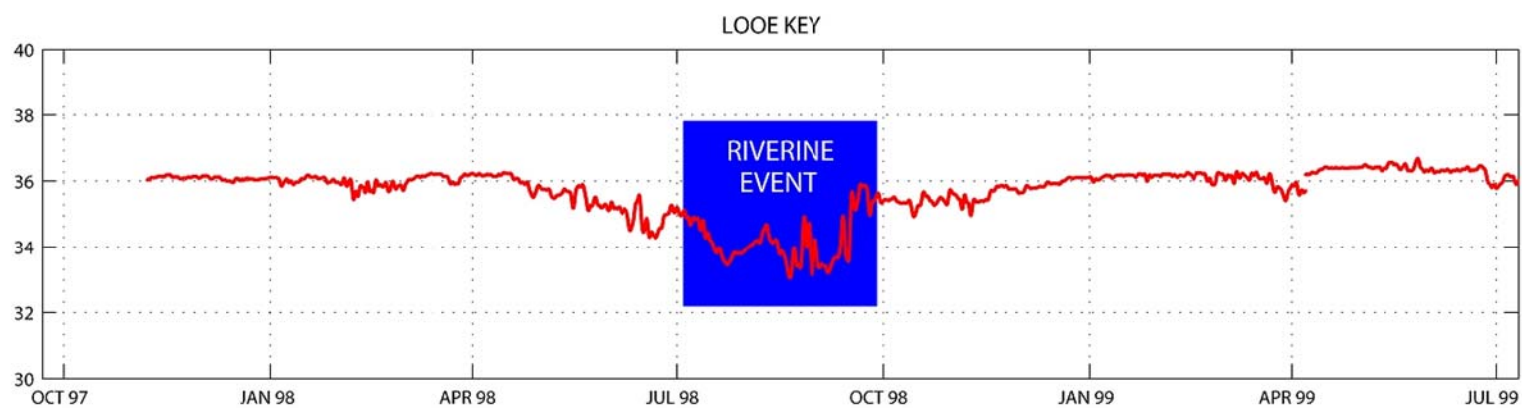
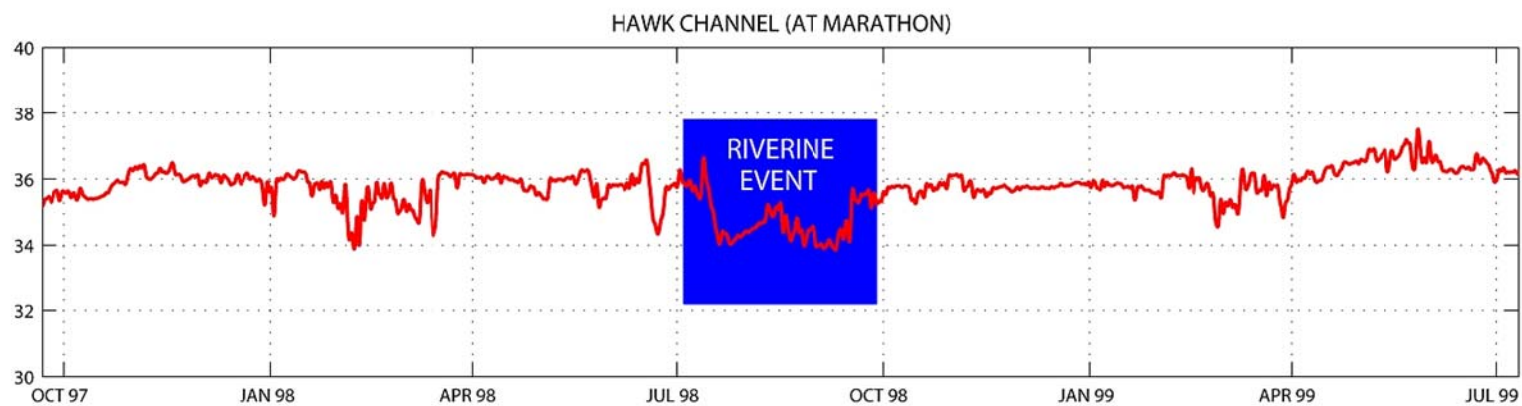
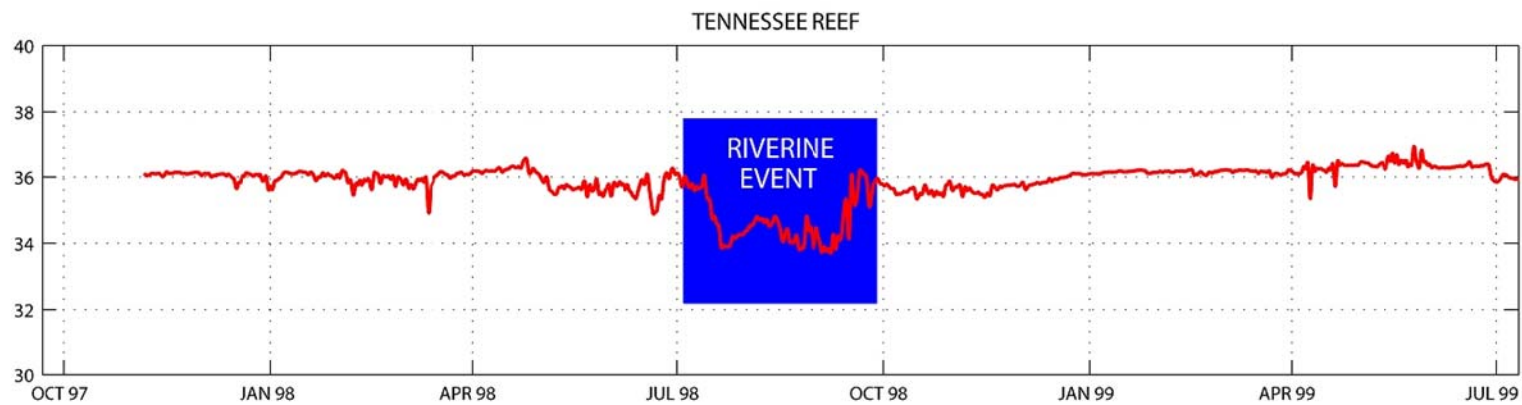


*Riverine input from the north*





**August 27 1998 image courtesy of USF iMARS**



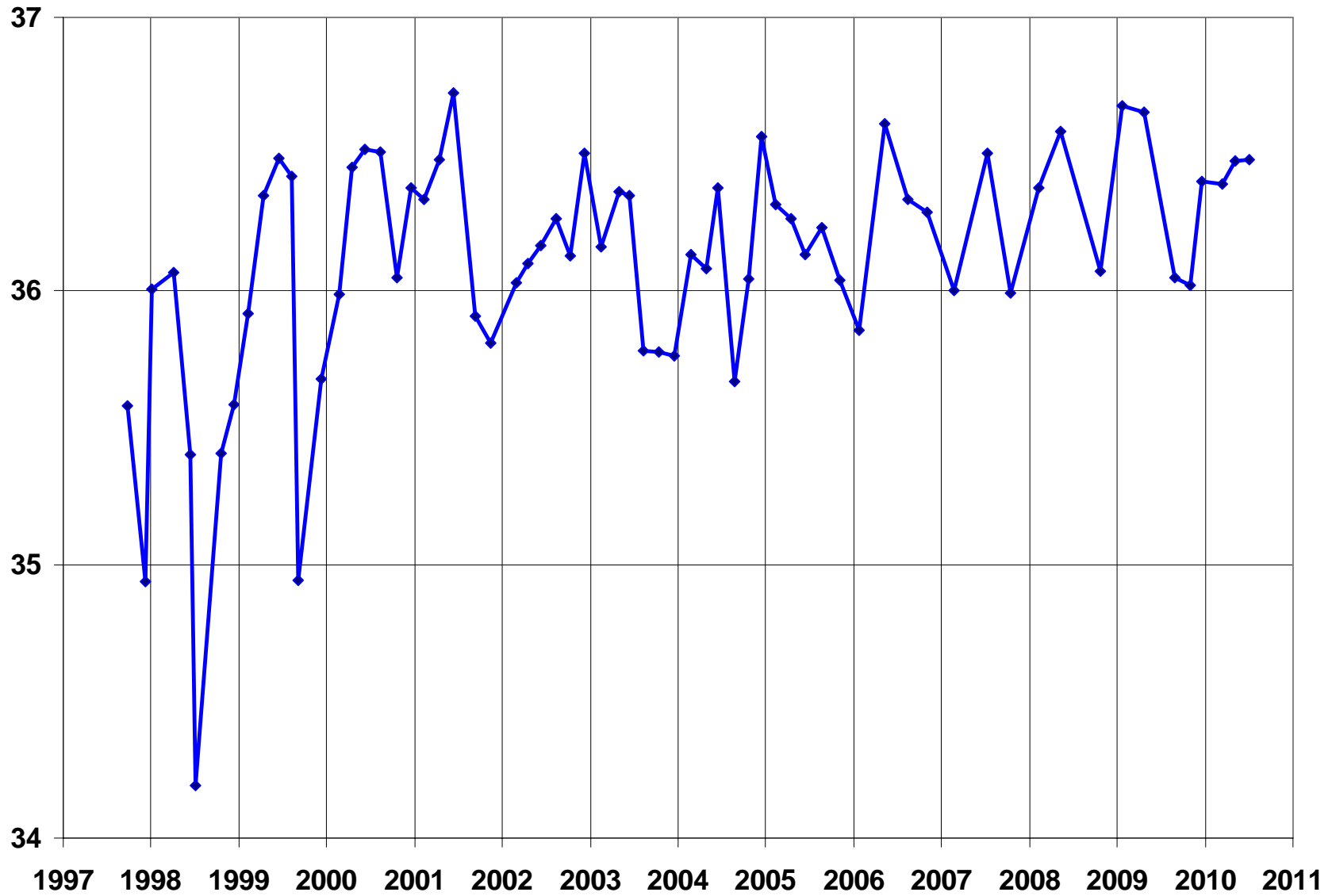
OCT 97

JUL 98

OCT 98

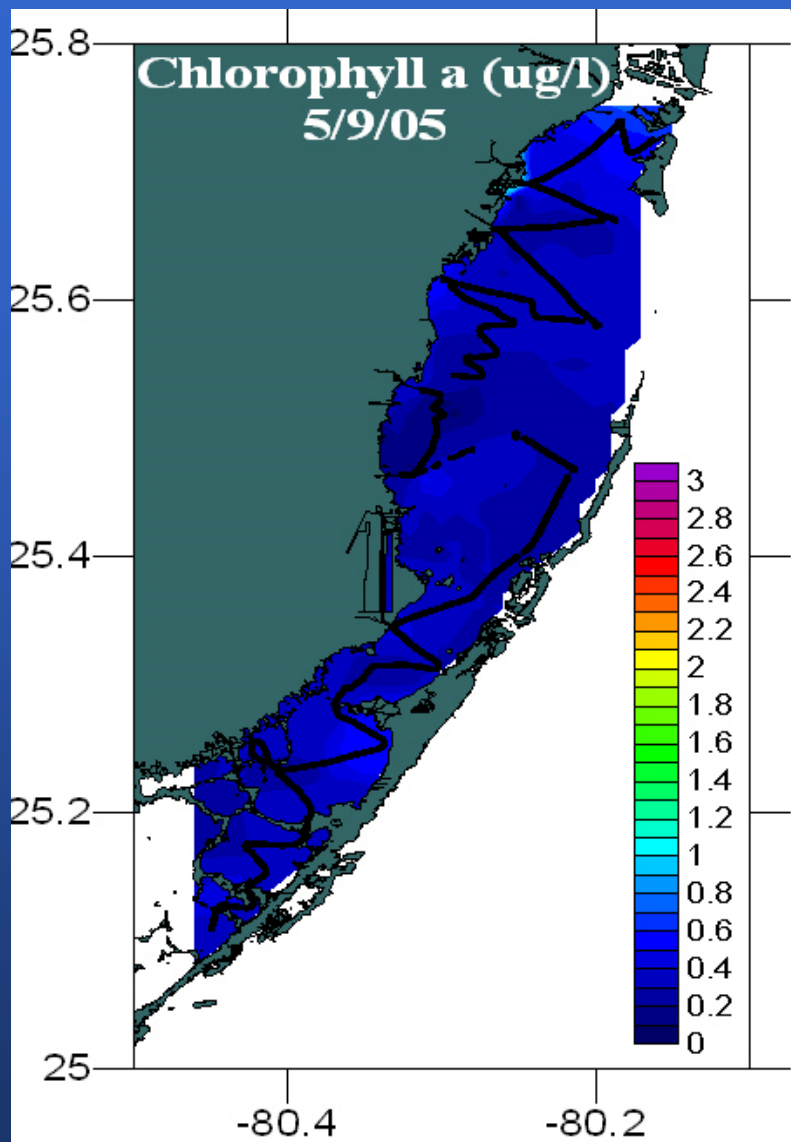
JUL 99

**SSS in the lower Keys and Tortugas**

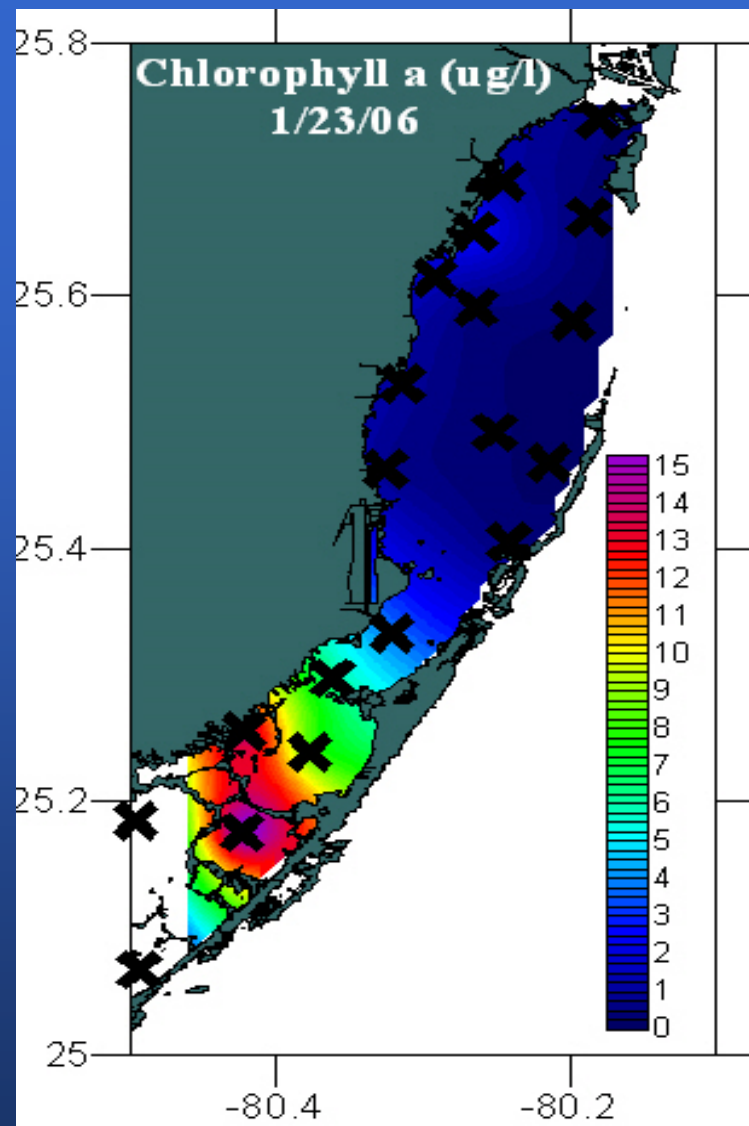


**SSS in the lower Keys and Dry Tortugas**

# *High chlorophyll in the Southern Estuaries*

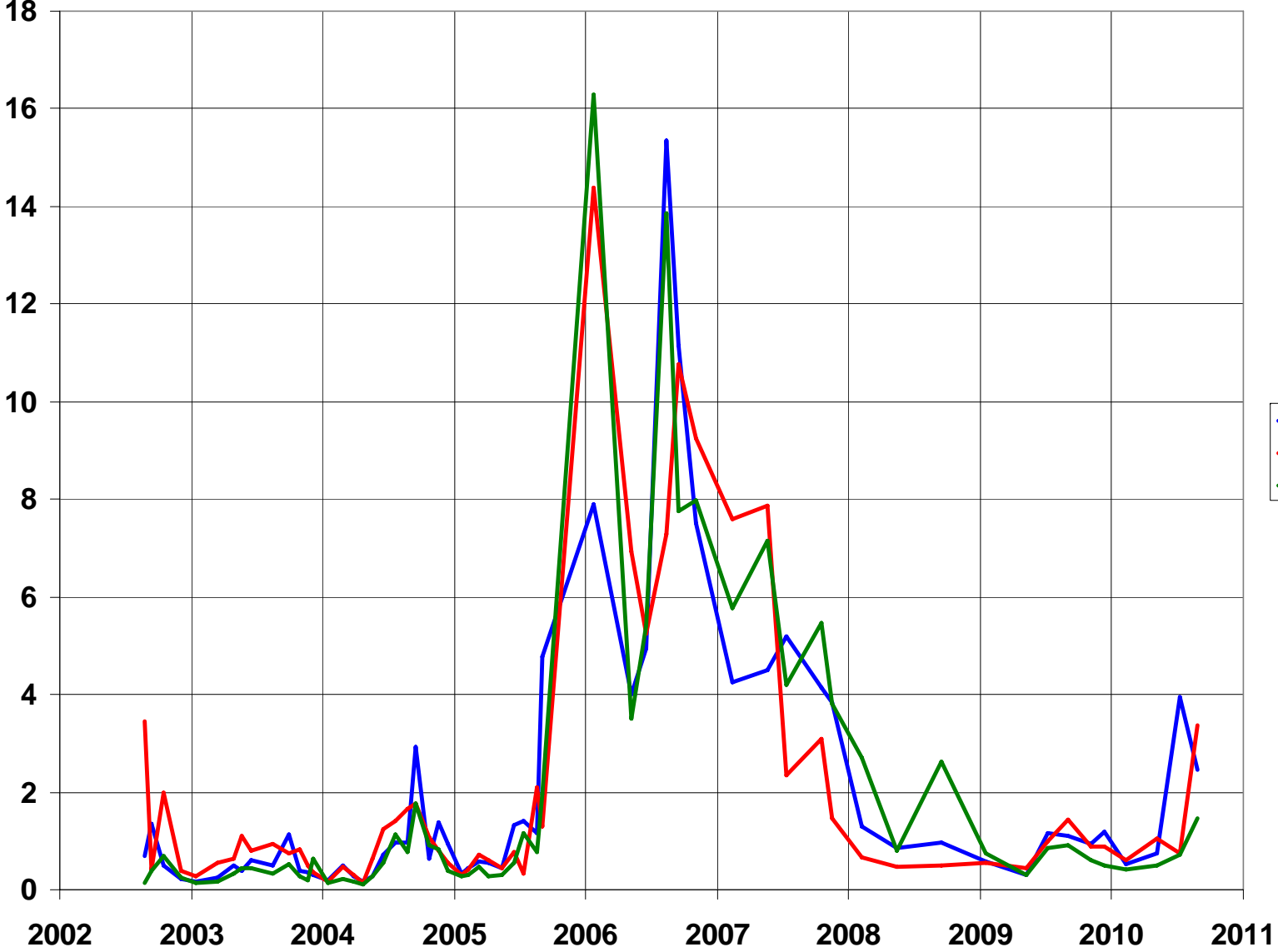


May 2005



January 2006

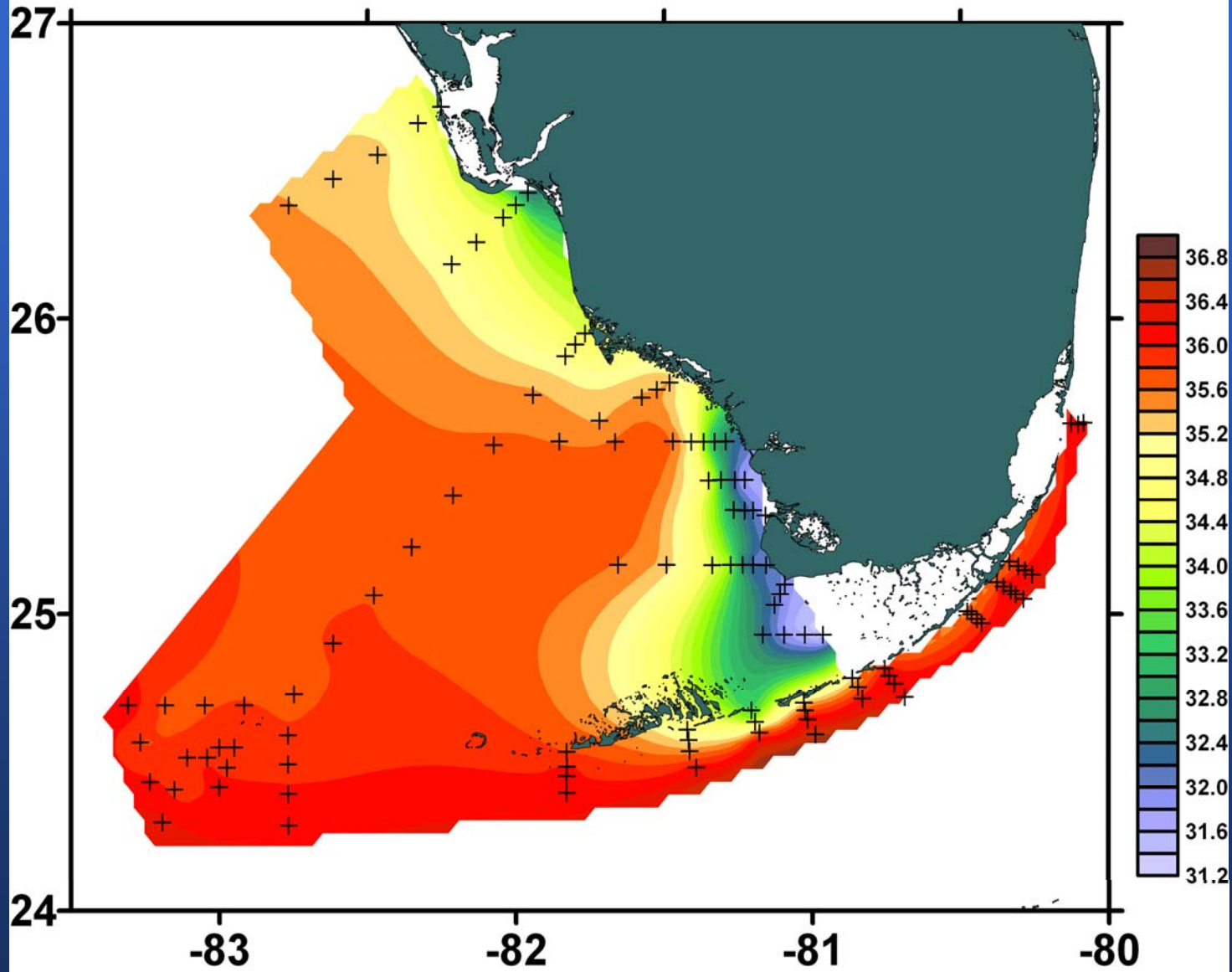
### CHL in the Southern Estuaries



### CHL in the Southern Estuaries

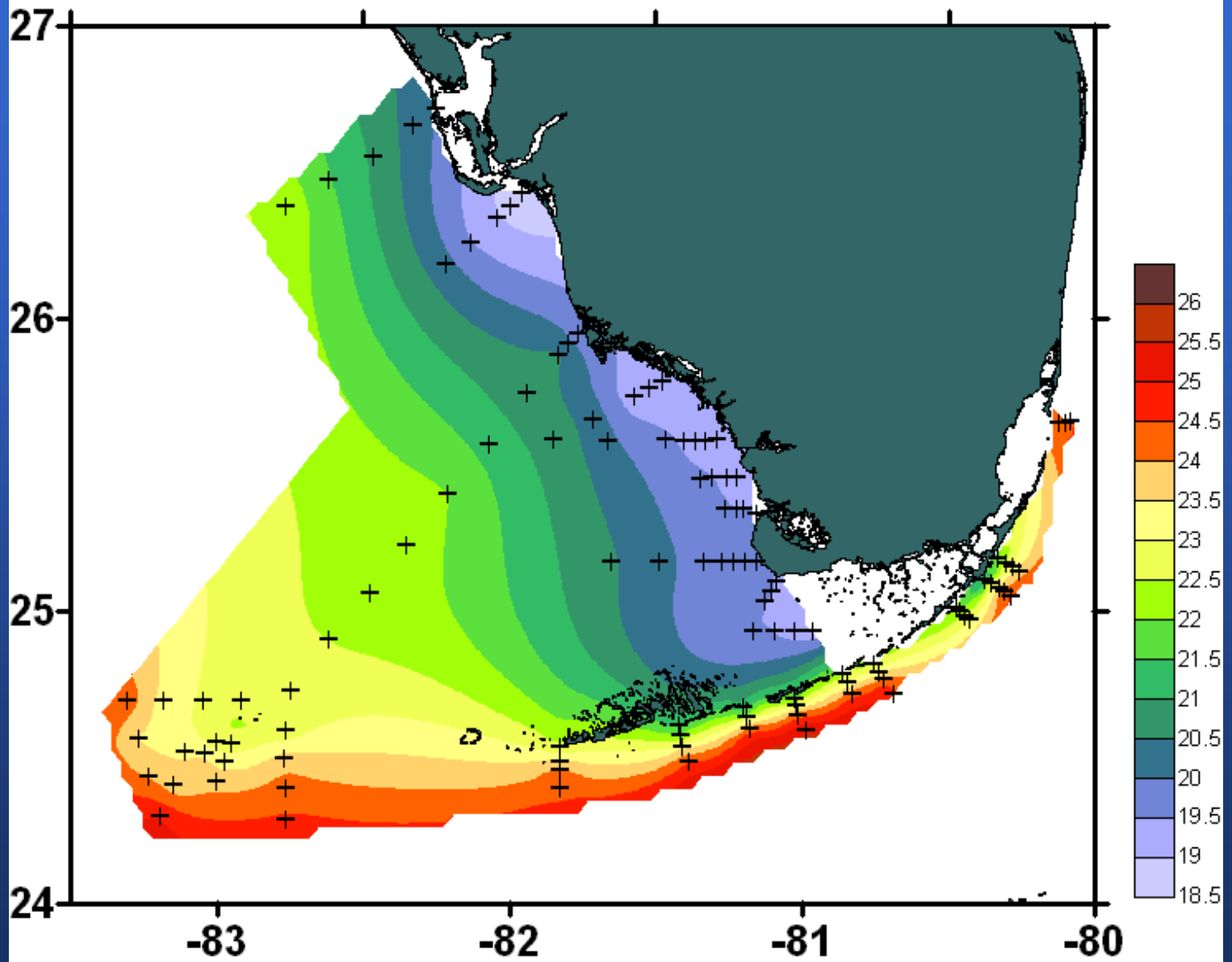
*Outflow through the Keys passages*

# DECEMBER 2003 Salinity

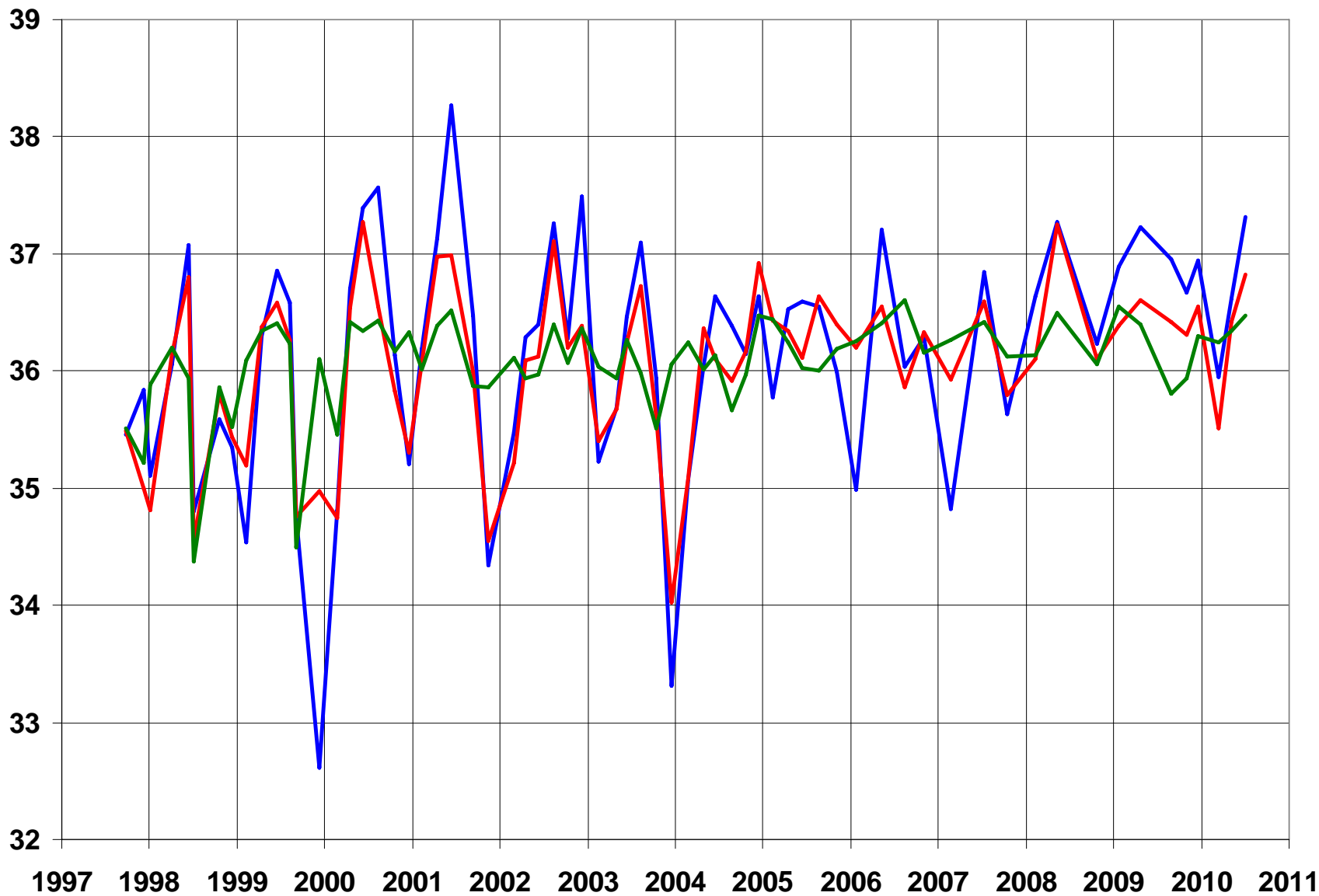




# DECEMBER 2003 SST



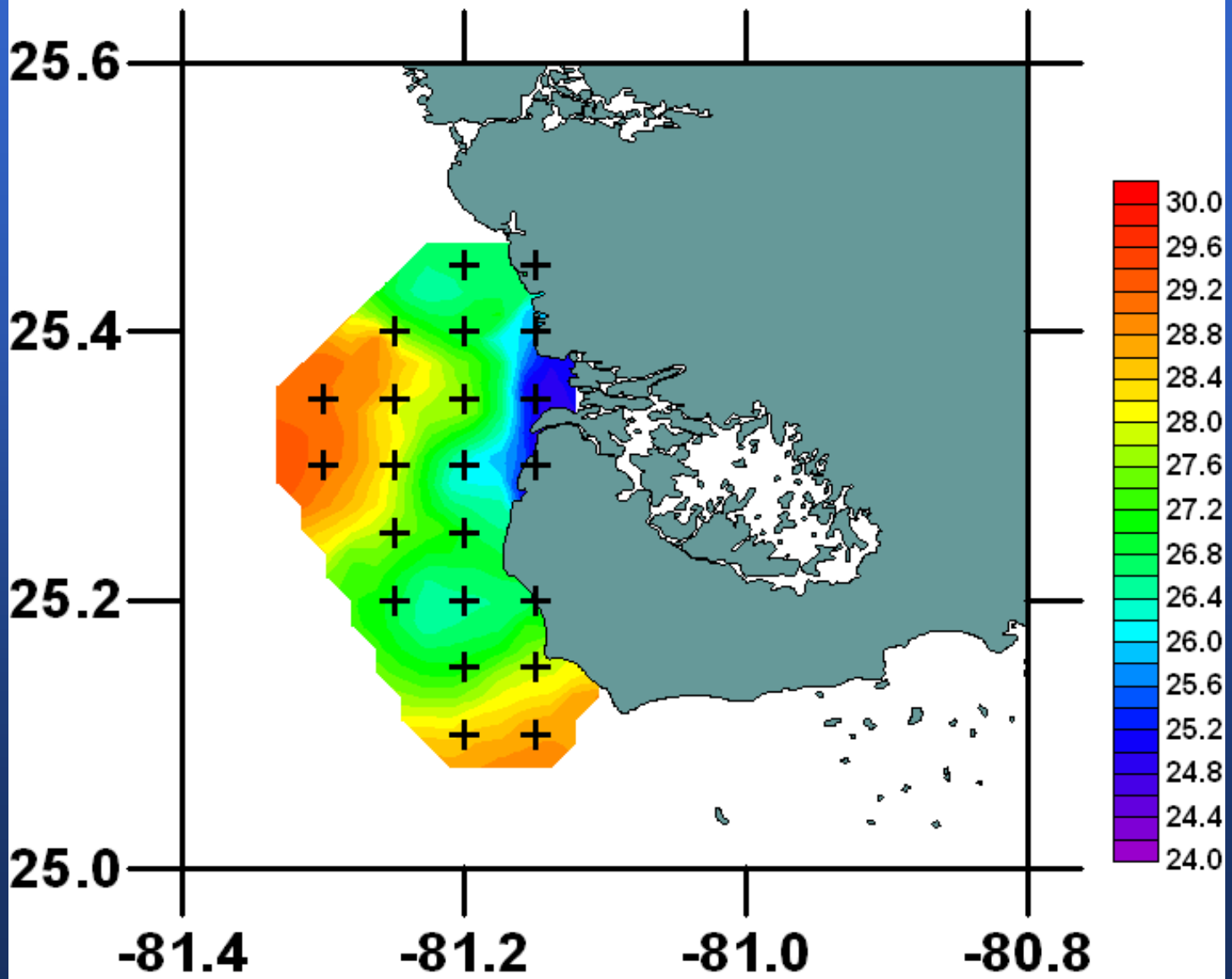
### MOSER CHANNEL (16, 17, 18) SSS



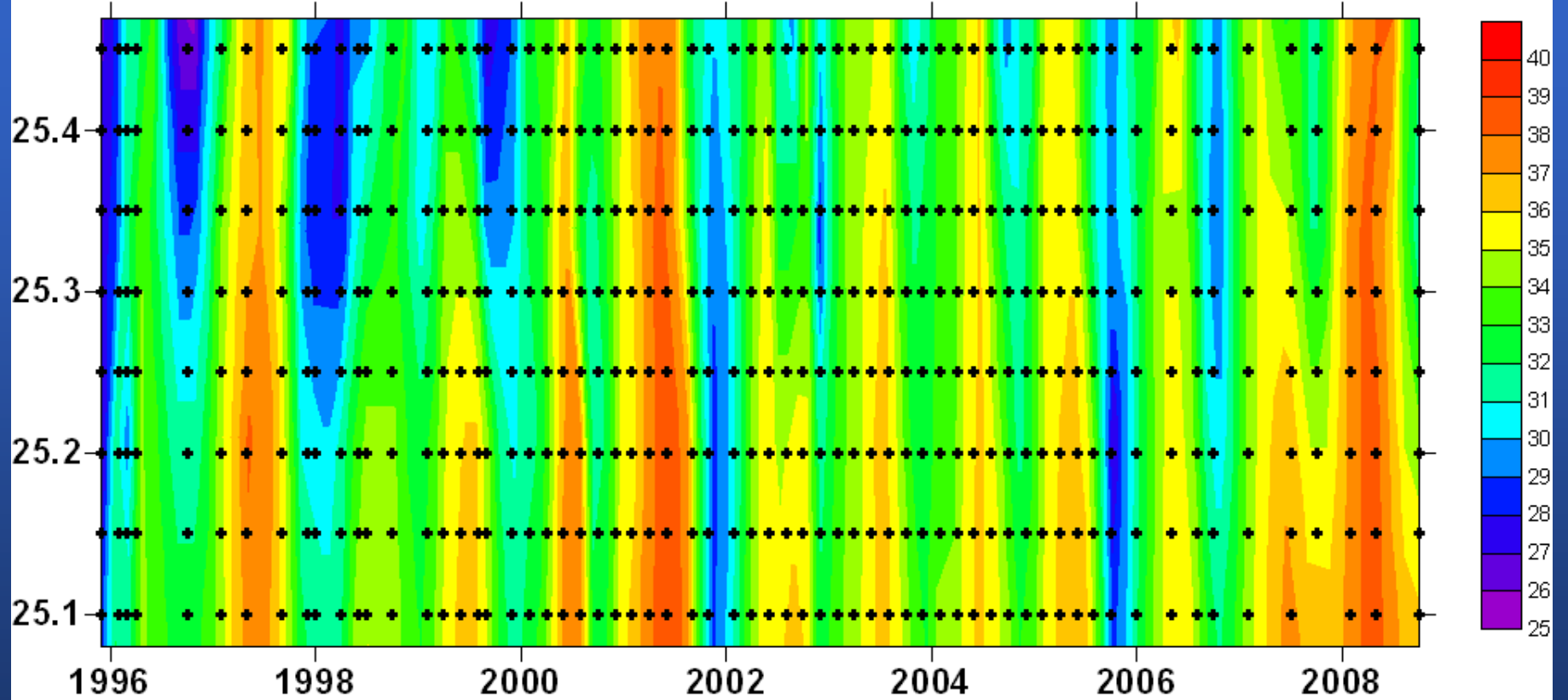
### SSS in Moser Channel

# *Shark River freshwater Input to Florida Bay*

# Shark River Salinity December 1995



## Shark River Salinity along 81.2 W



# Summary

**South Florida surface temperature, salinity, and chlorophyll vary on a wide range of spatial and temporal scales.**

**Extreme events dominate the time series.**

**The Comprehensive Everglades Restoration will likely change the observed patterns of salinity and chlorophyll in the coastal regions, Bays, and estuaries.**

**Sustained observations are necessary in order to identify and understand the natural and anthropogenic variability.**

*Questions?*