

10th HYCOM meeting - Nov 7-9, 2006
COAPS, Tallahassee, FL

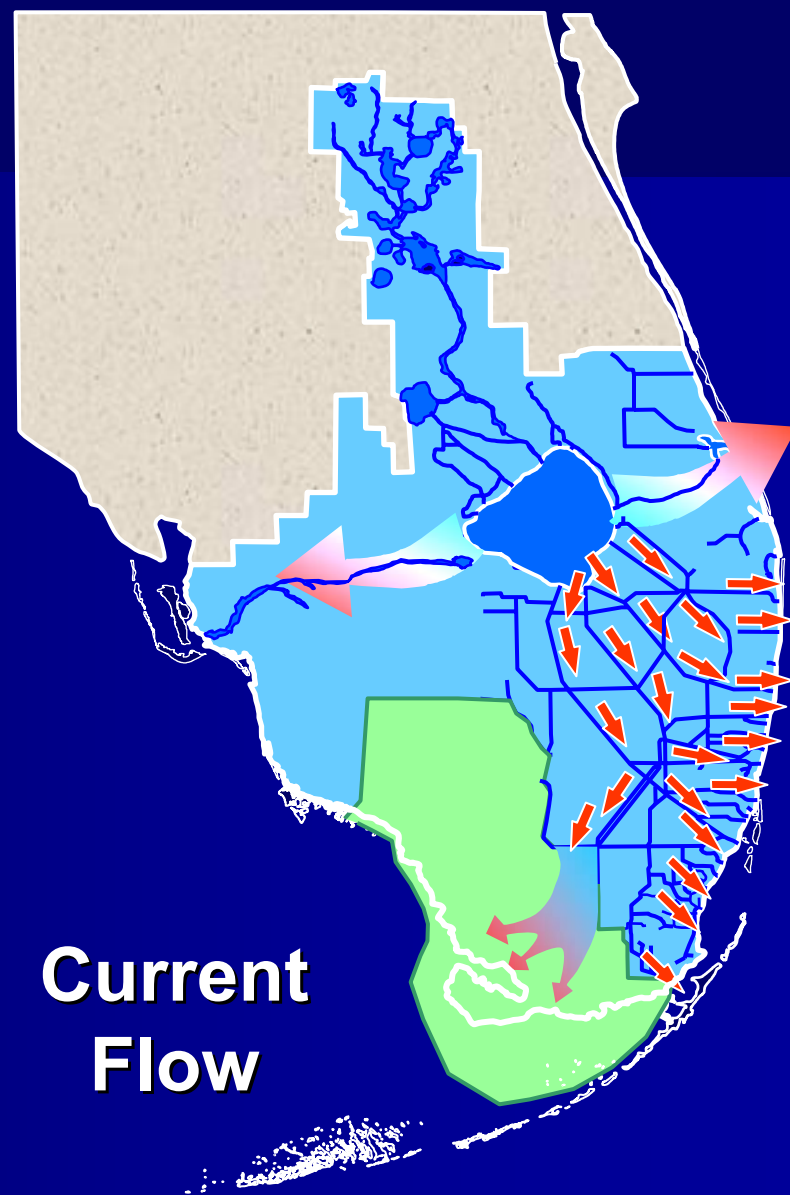
On the transport of river induced low salinity waters in the SoFLA-HYCOM domain

Rafael Schiller, Villy Kourafalou and Ge Peng
(UM/RSMAS)

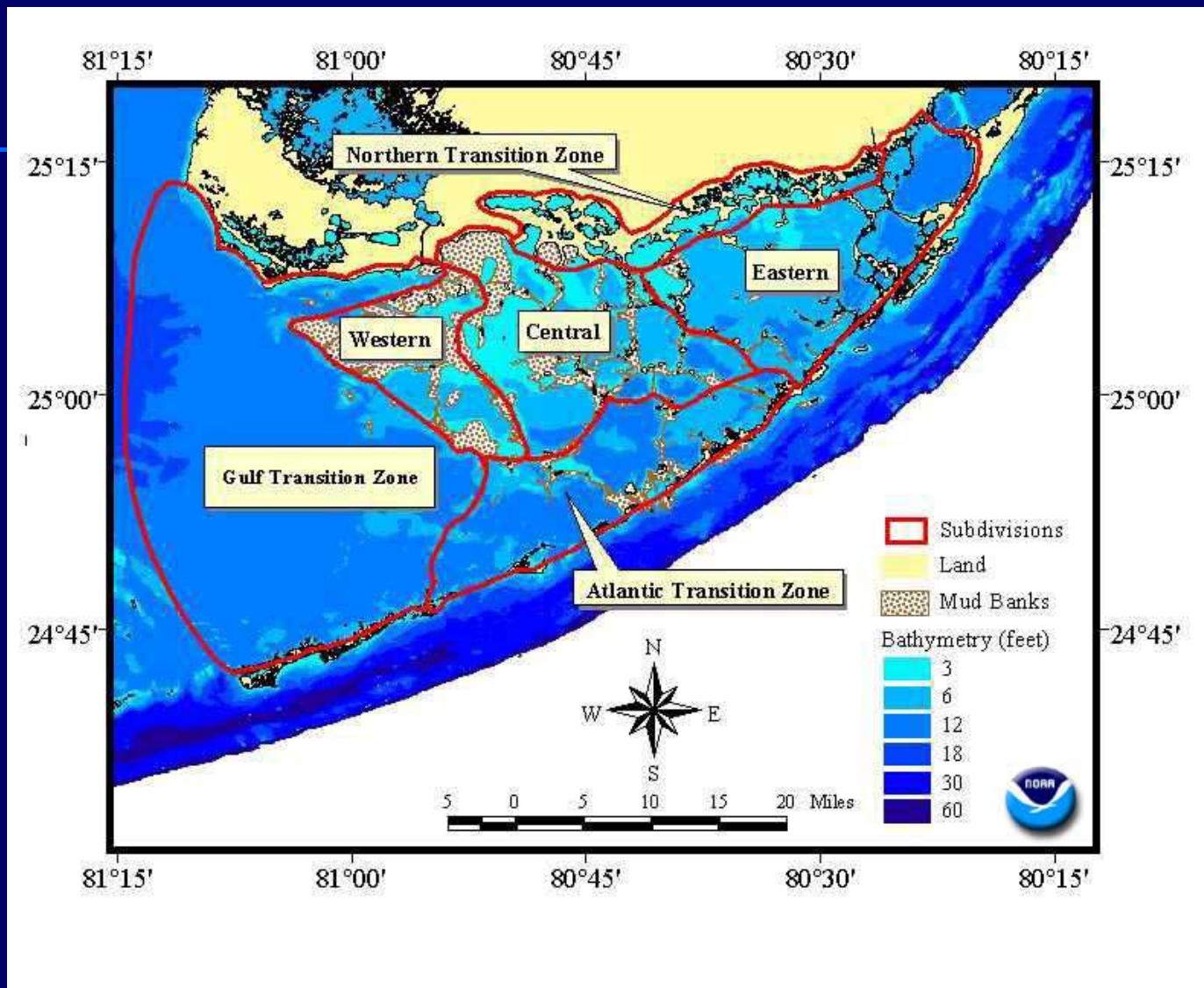
In collaboration with
Libby Johns (NOAA-AOML)
Pat Hogan (NRL)



Comprehensive Everglades Restoration Plan (CERP)

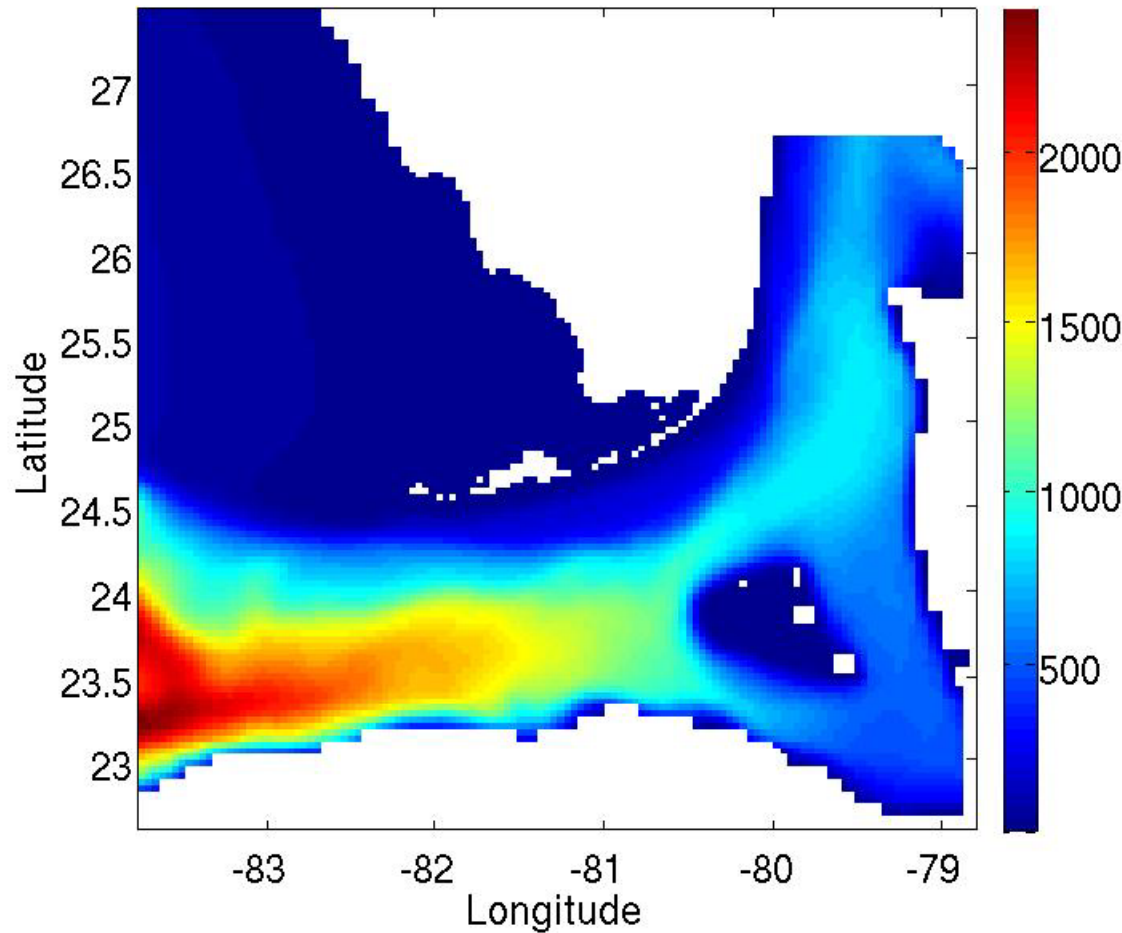


Florida Bay basins



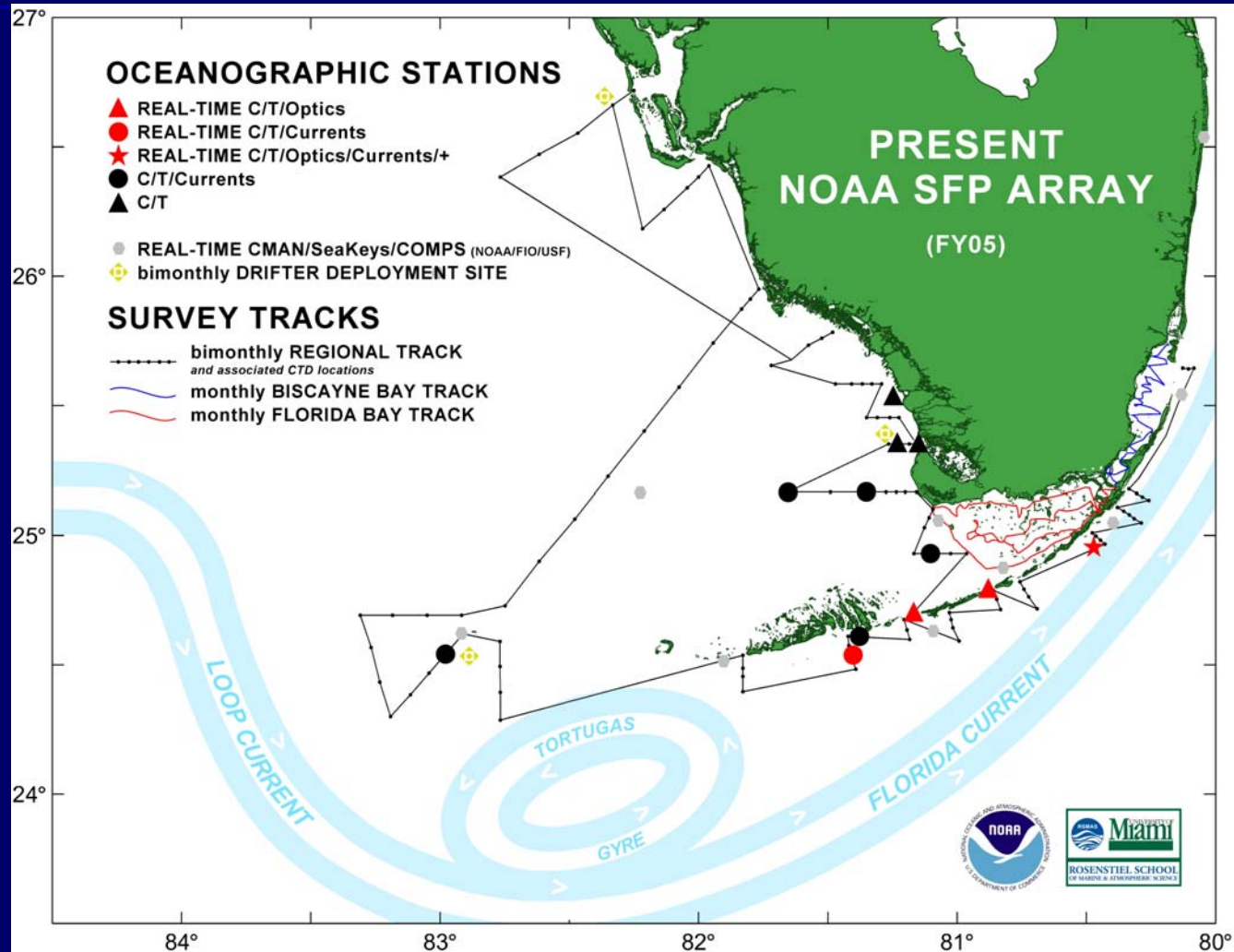
SoFLA-HYCOM

SoFLA-HYCOM bathymetry (meters)



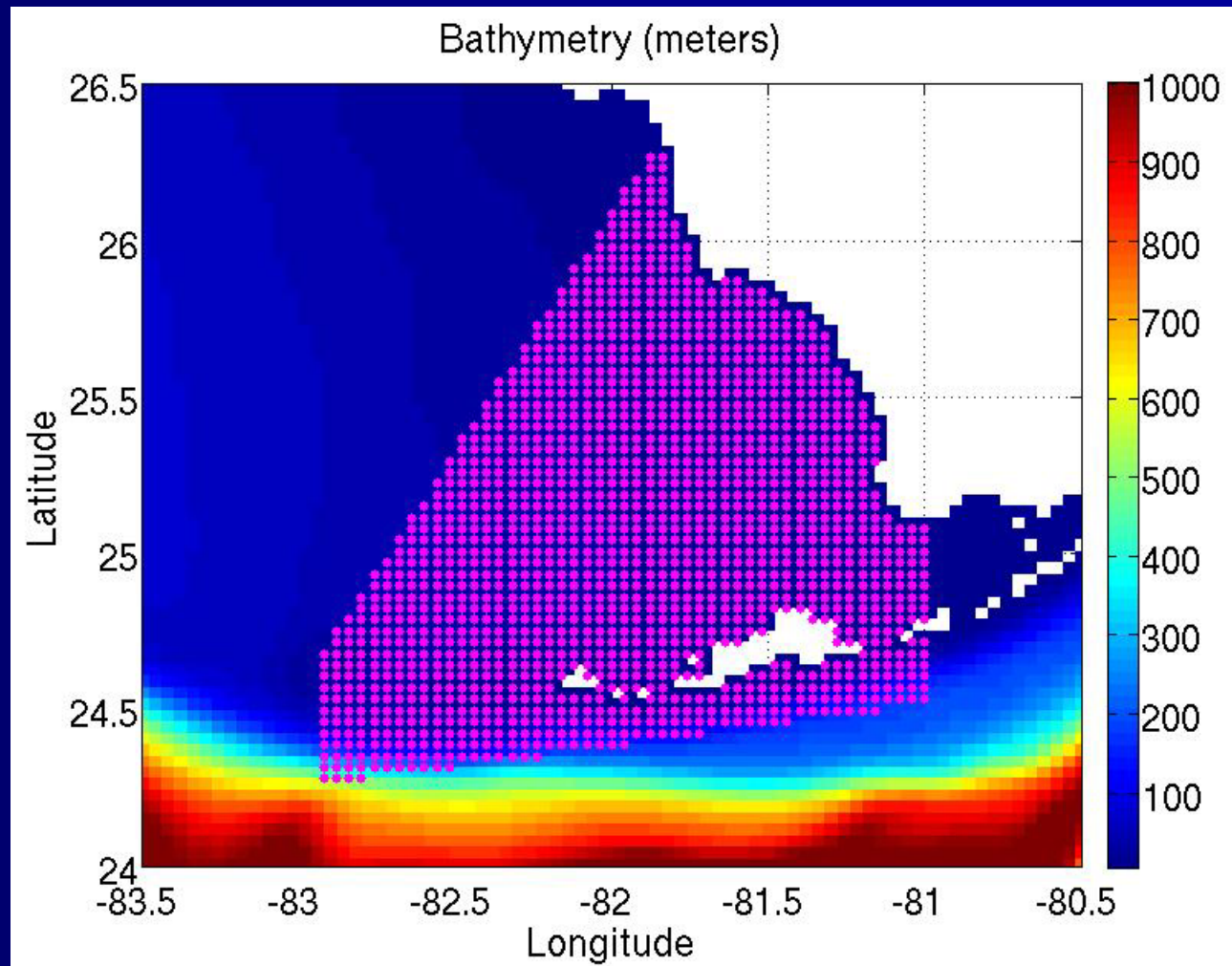
- September 99 to December 02
- 2004

NOAA-SFP oceanographic observations

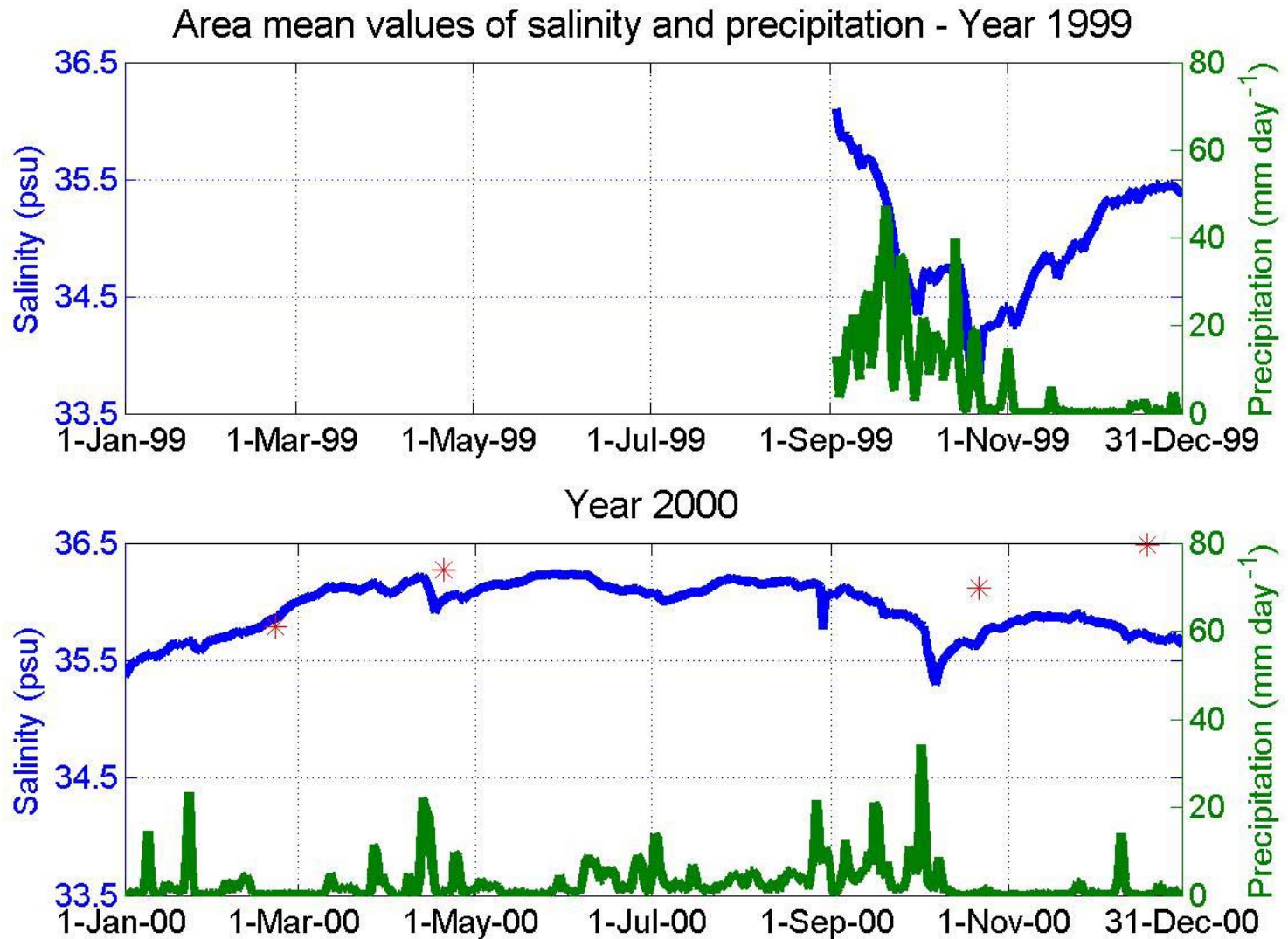


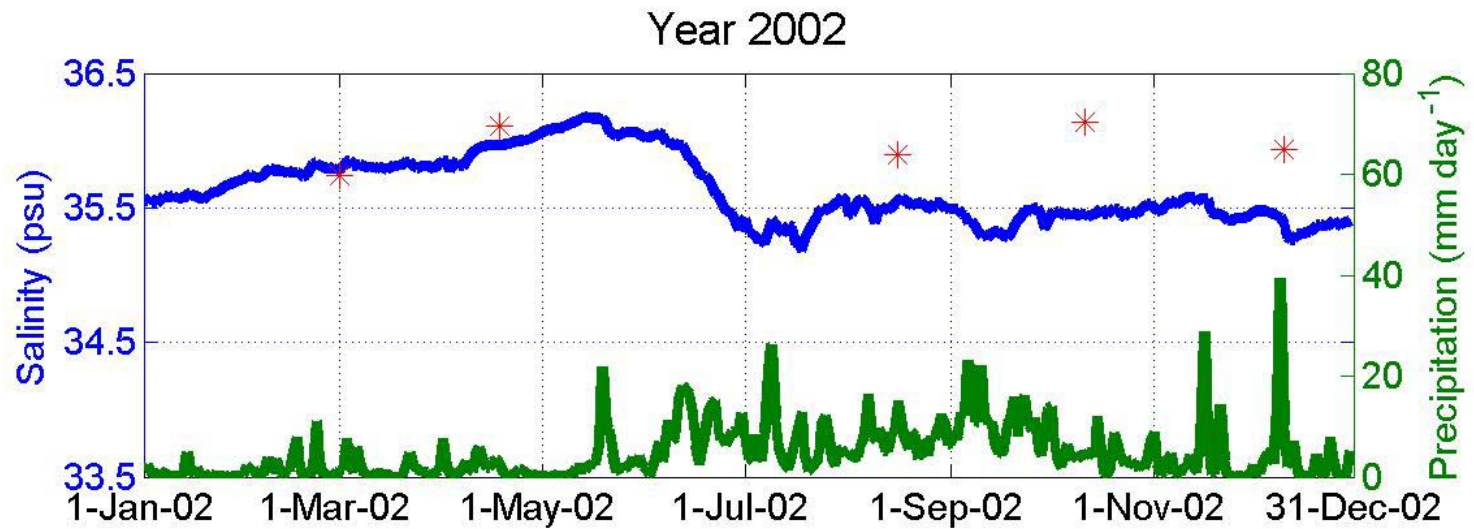
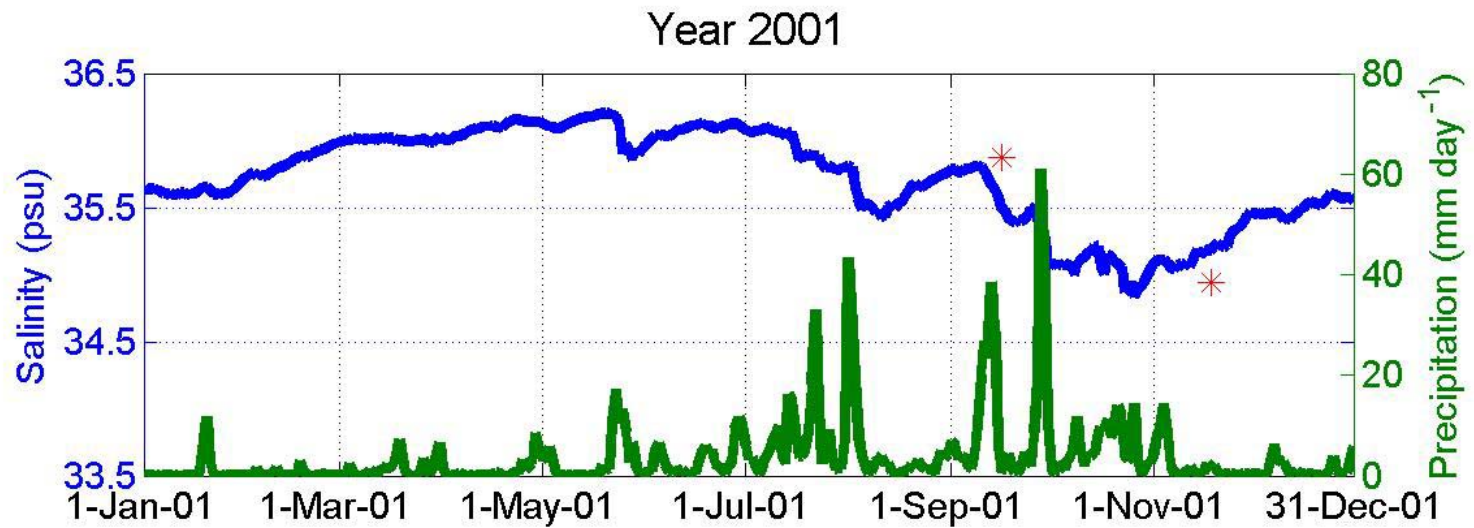
Fresh water fluxes and pathways

- Approximate area around cruise tracks
- Surface salinity variability
- Freshwater pathways



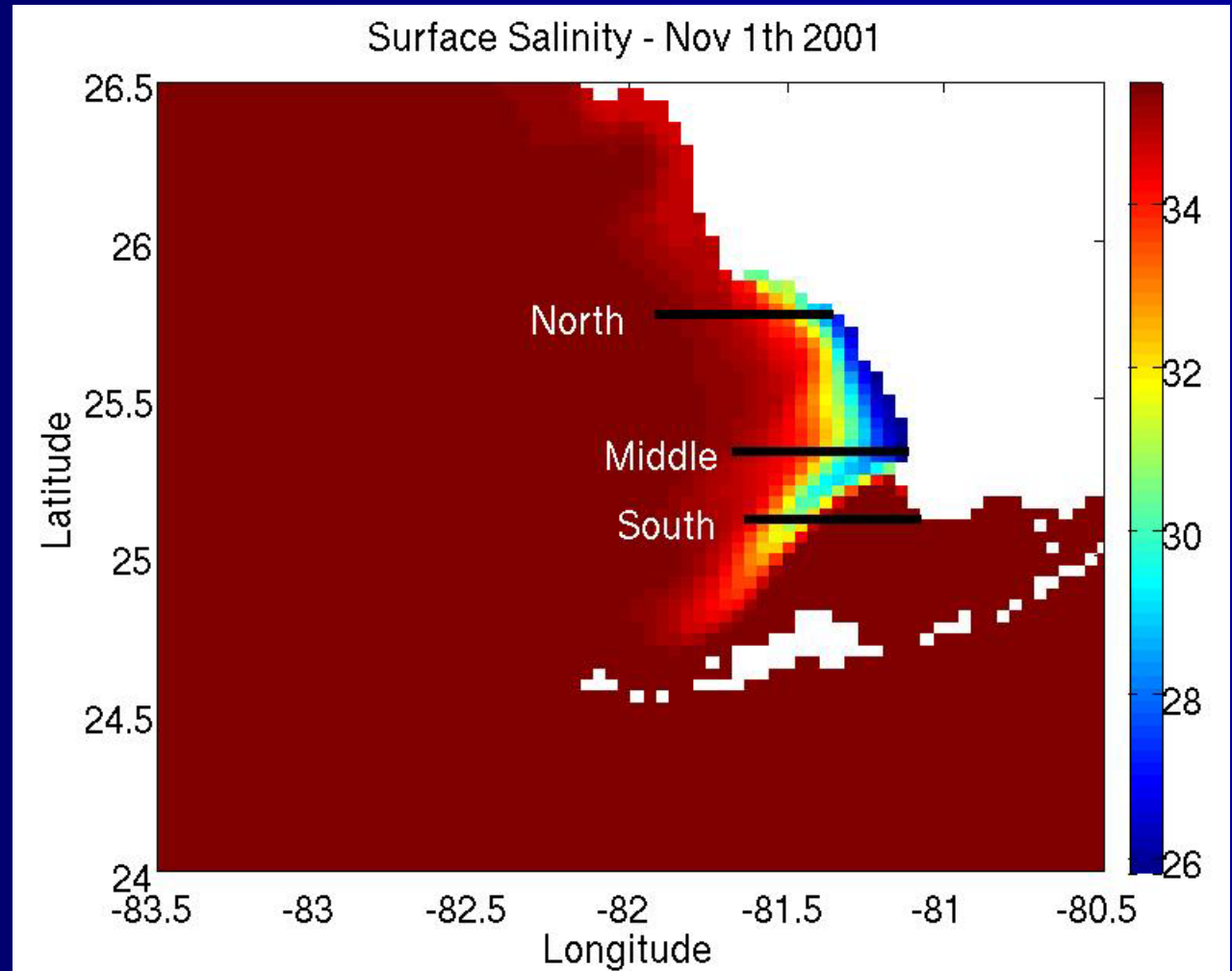
■ Area mean values – Daily fields



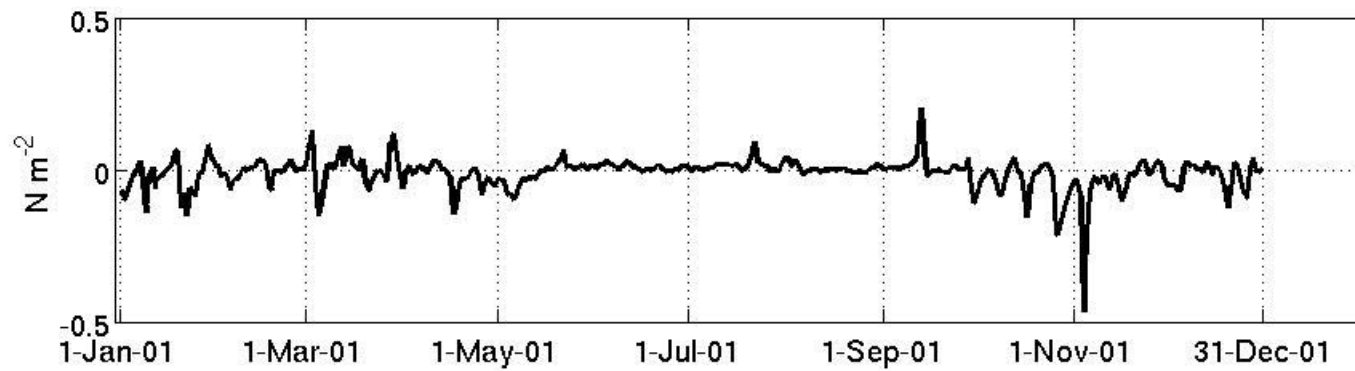


- Fresh water fluxes - Sections: $\sim 55\text{km}$ long
- Fresh water fraction $F = (S_a - S) / S_a$

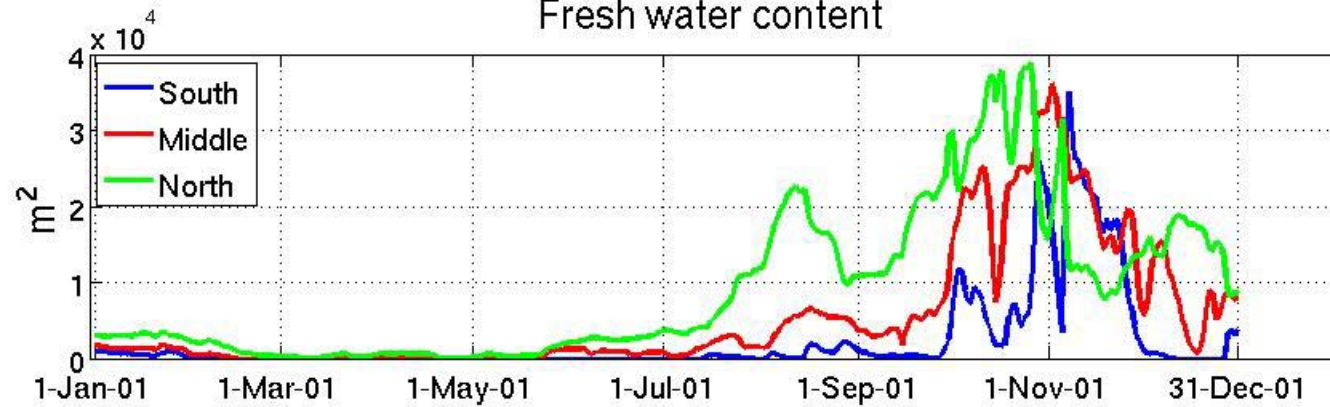
S_a = Ambient
salinity (35.5)



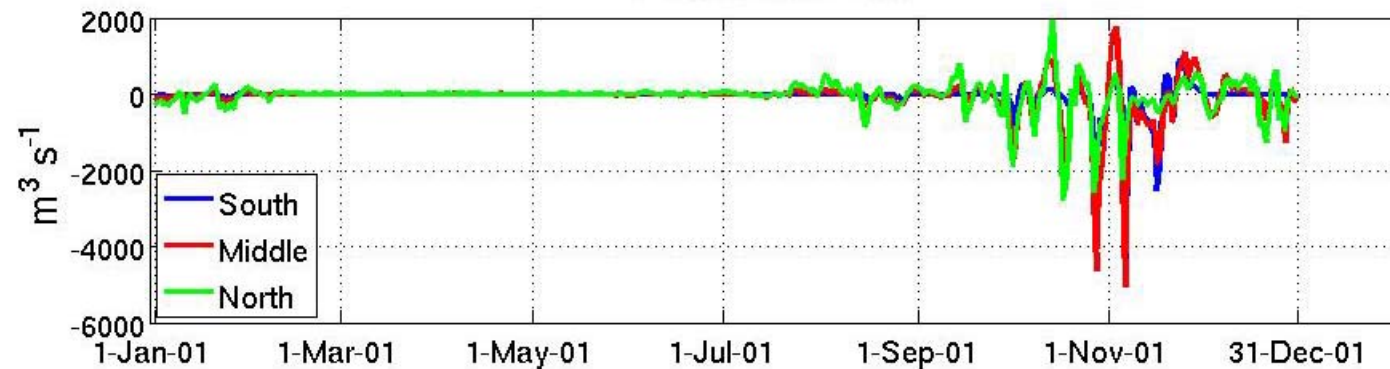
North/South wind stress at the middle section



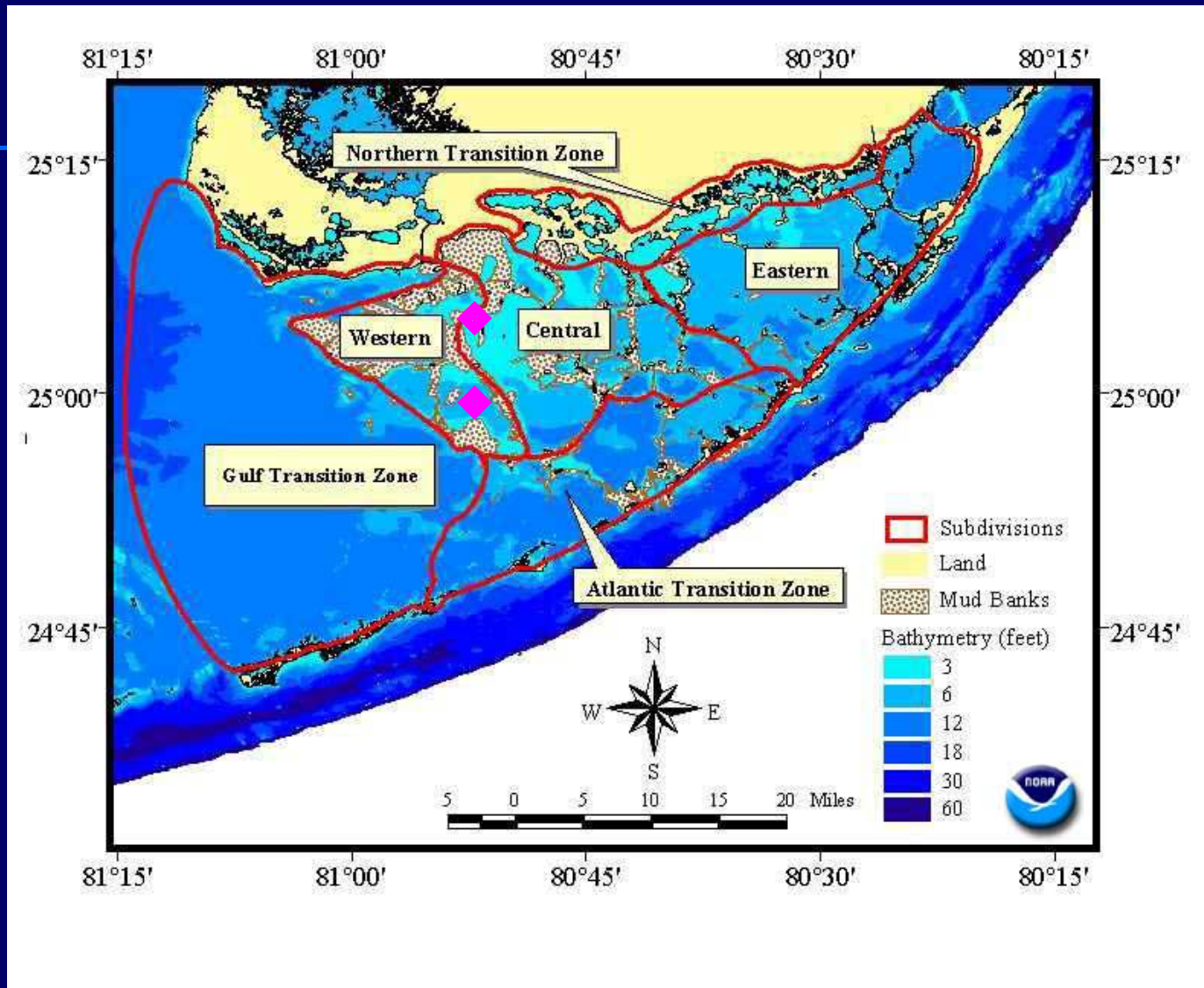
Fresh water content



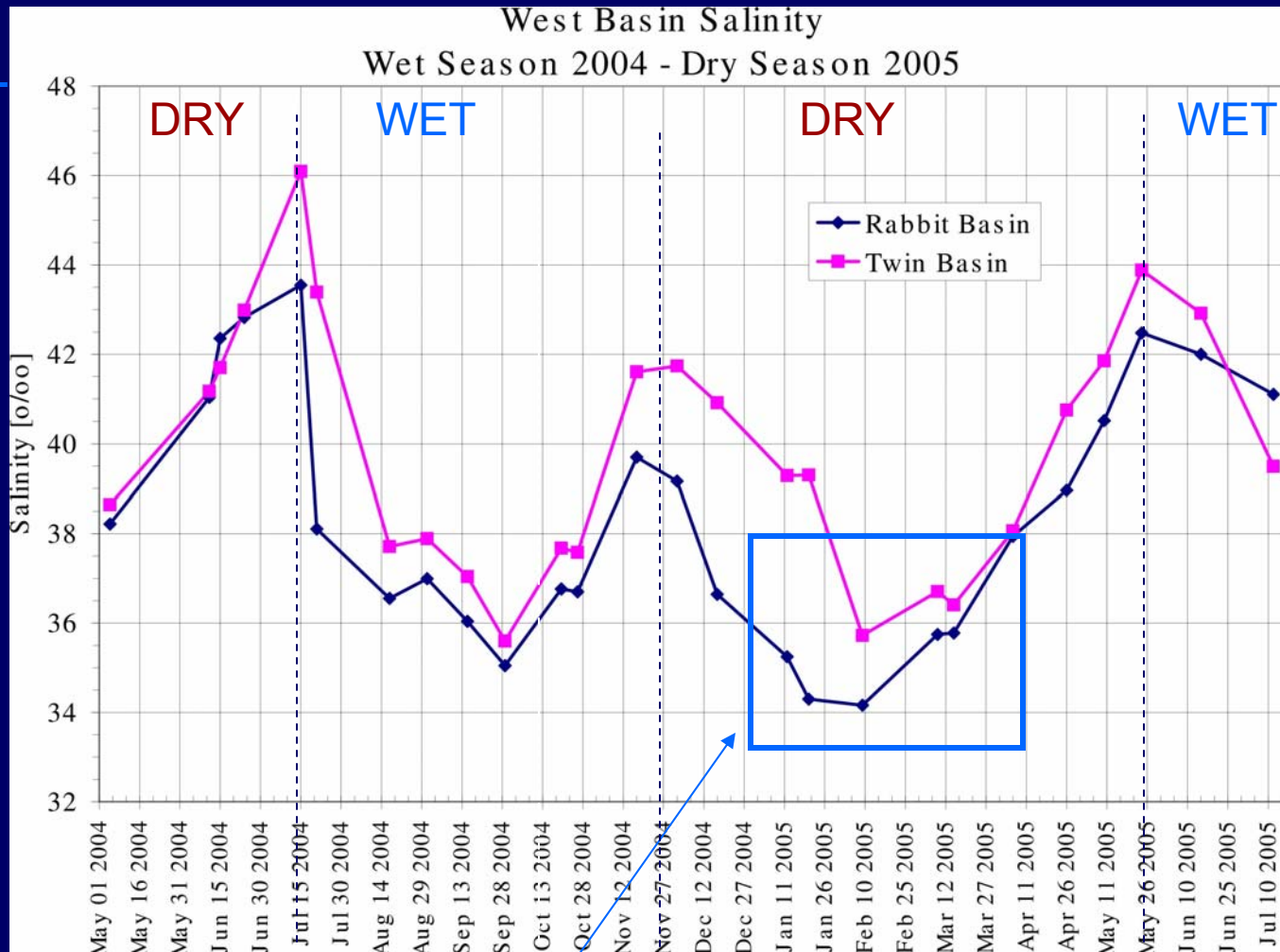
Fresh water flux



Florida Bay basins



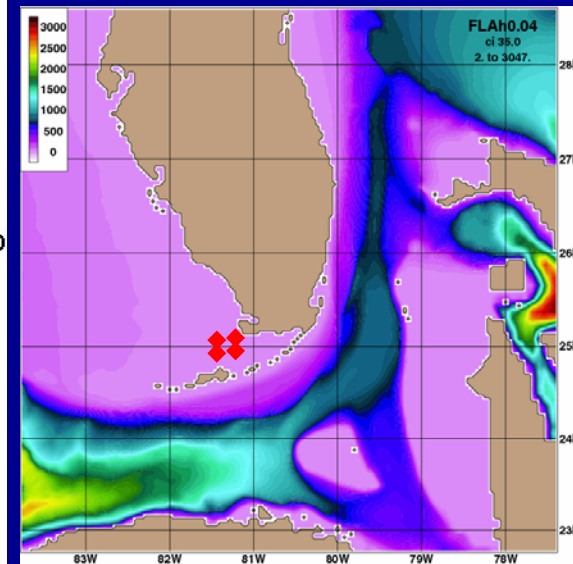
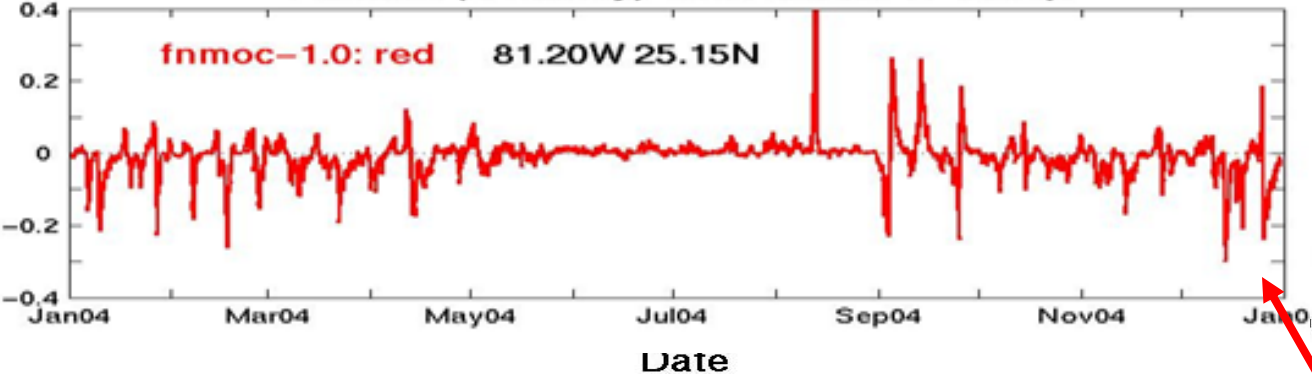
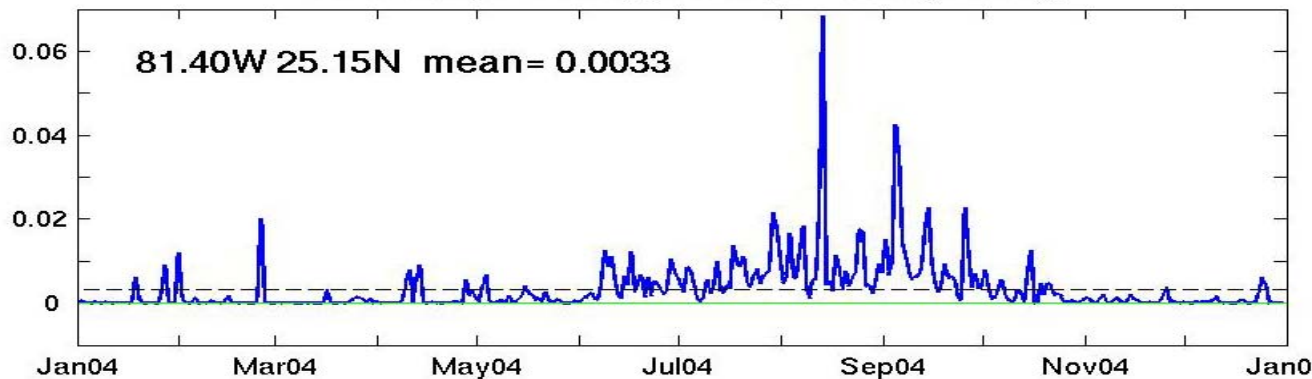
Basin Average Salinity Rabbit Key and Twin Key Basins May 2004 to July 2005



low salinity during the dry season due to intrusion from the SW Florida shelf

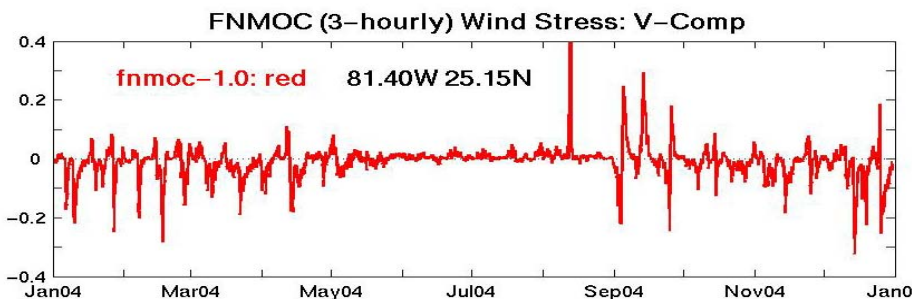


FNMOC-1.00 deg Atm. forcing on SW FL Shelf: PCIP and V-wind stress

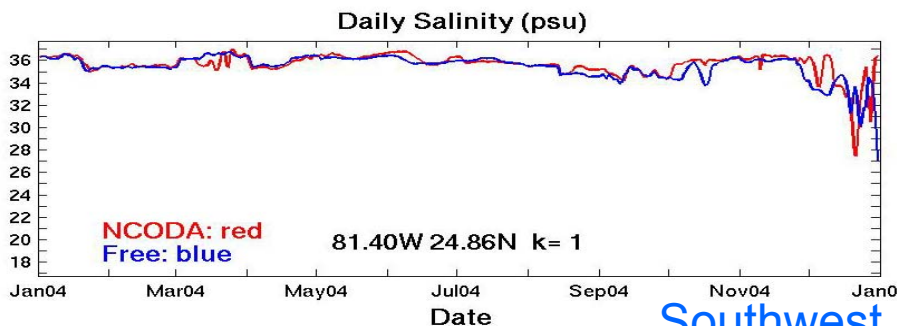
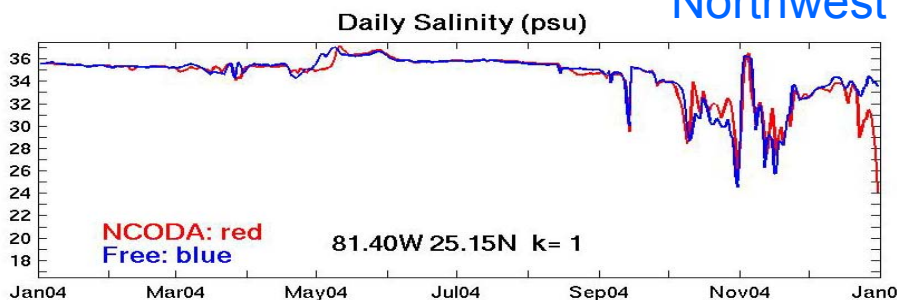


Strong southward winds after maximum precipitation (and river runoff) in fall 2004

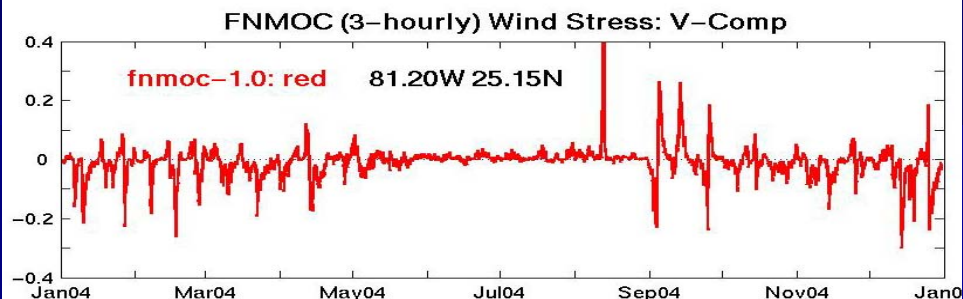
FLAh0.04 Time Series on SW FL Shelf Salinity



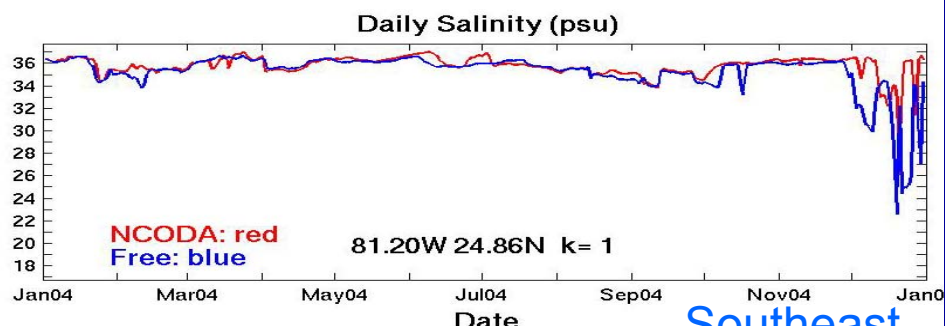
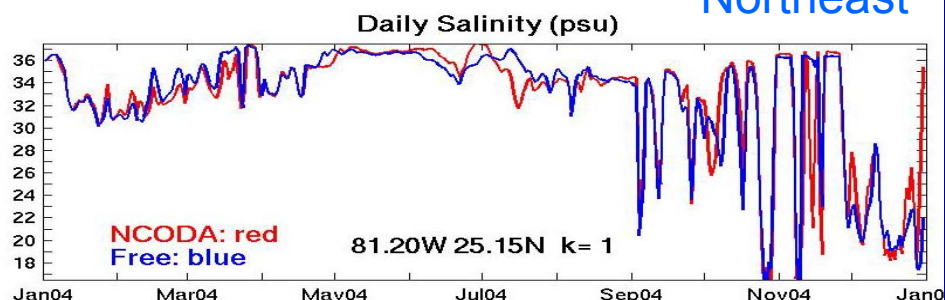
Northwest



Southwest



Northeast



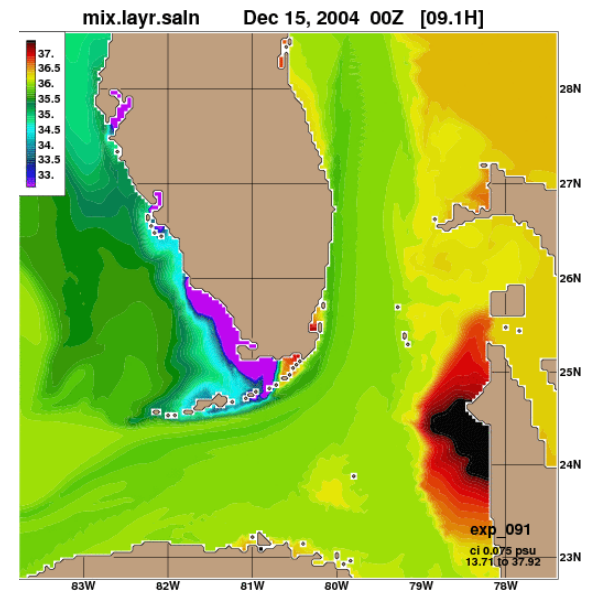
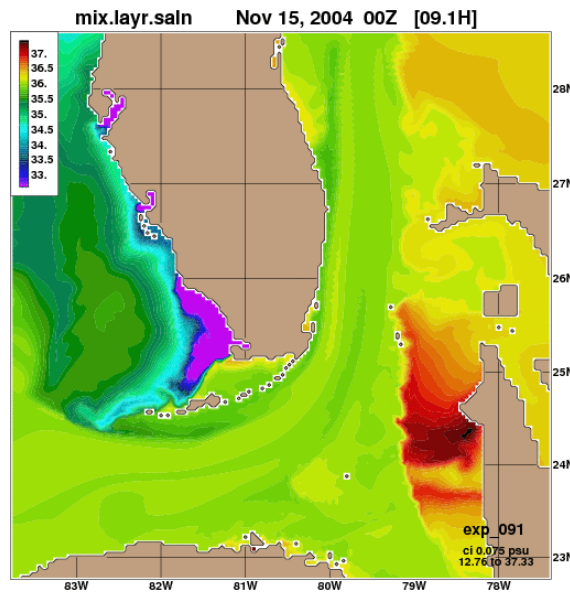
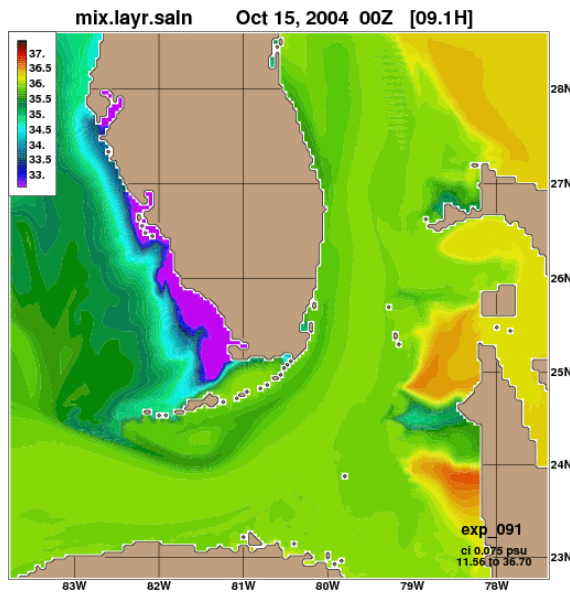
Southeast

Surface Salinity

Oct 15 2004

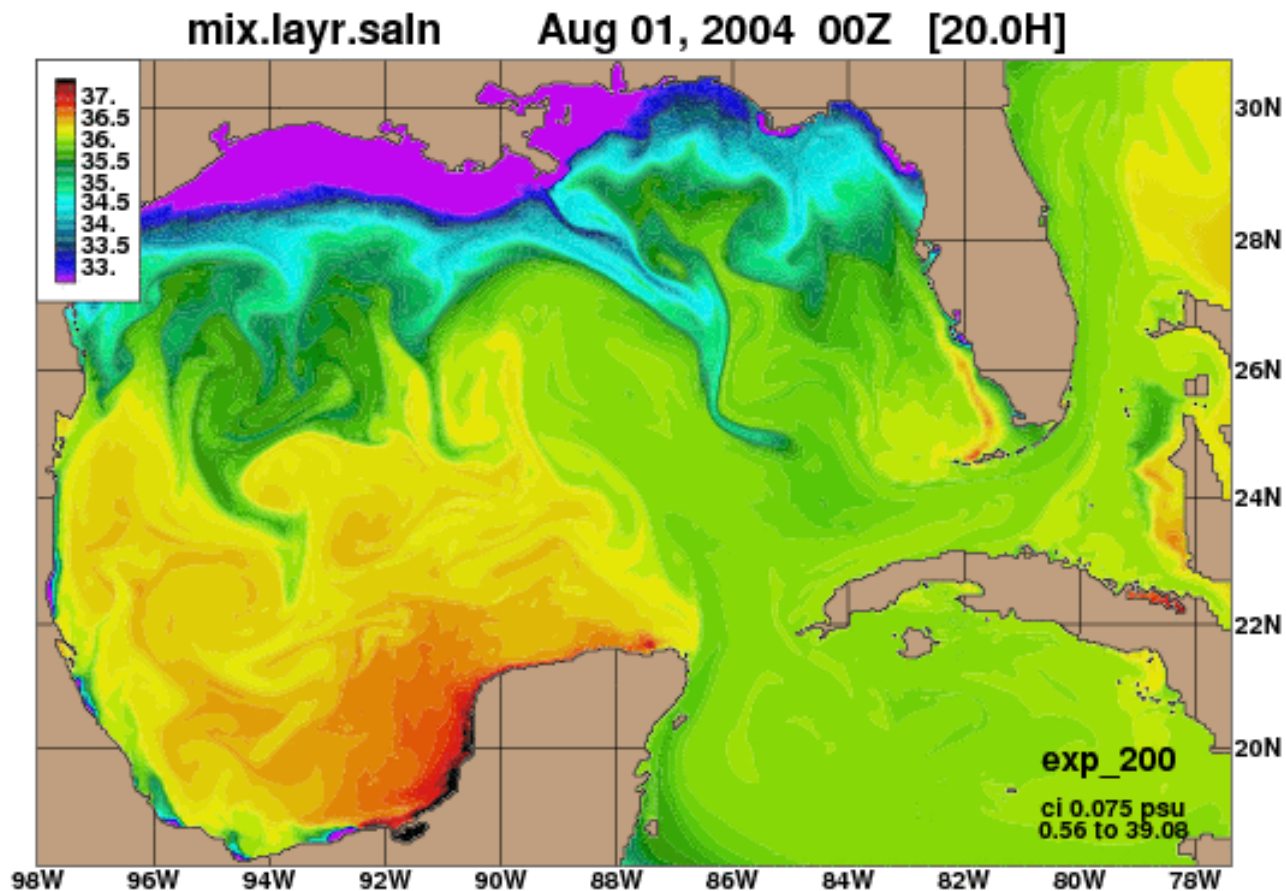
Nov 15 2004

Dec 15 2004

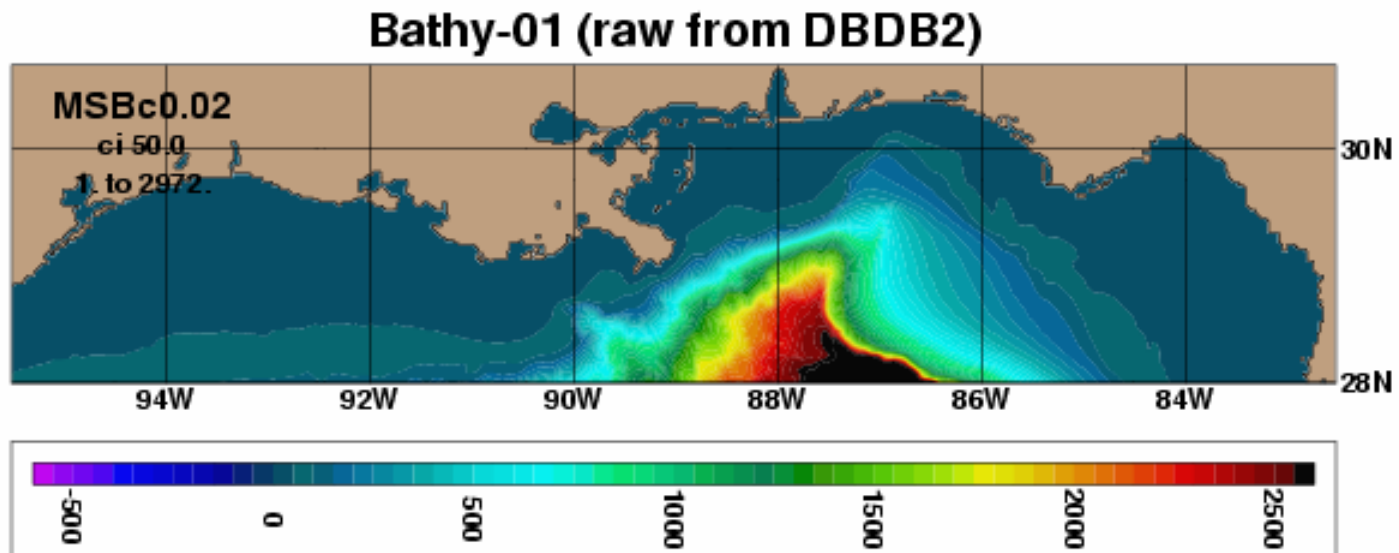


Next Steps – Remote sources

GOMh0.04 Surface Salinity (expt_20.0 NCODA)



- Northern Gulf of Mexico domain
- Evaluate the dynamics behind the offshore transport of MR plume waters towards the South Florida Region



Thanks!