

SAFMC Workshop, Charleston, 16-18 NOV 2005

USING HIGH-RESOLUTION COASTAL OCEAN SIMULATIONS IN RELATION TO ECOSYSTEM-BASED MANAGEMENT

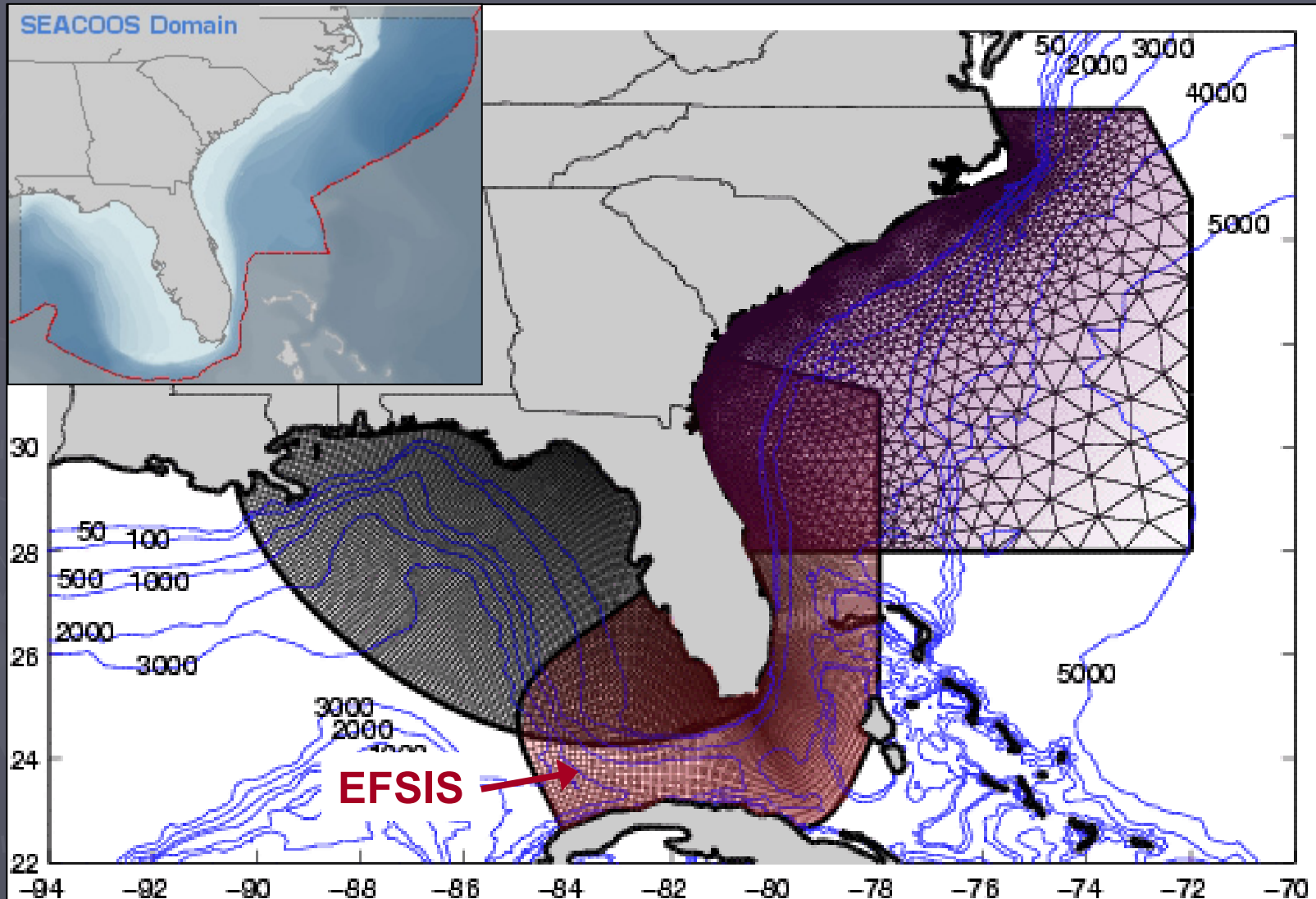
Jerome Fiechter, Christopher Mooers, Inkweon Bang

Ocean Prediction Experimental Laboratory
Rosenstiel School of Marine and Atmospheric Science
University of Miami



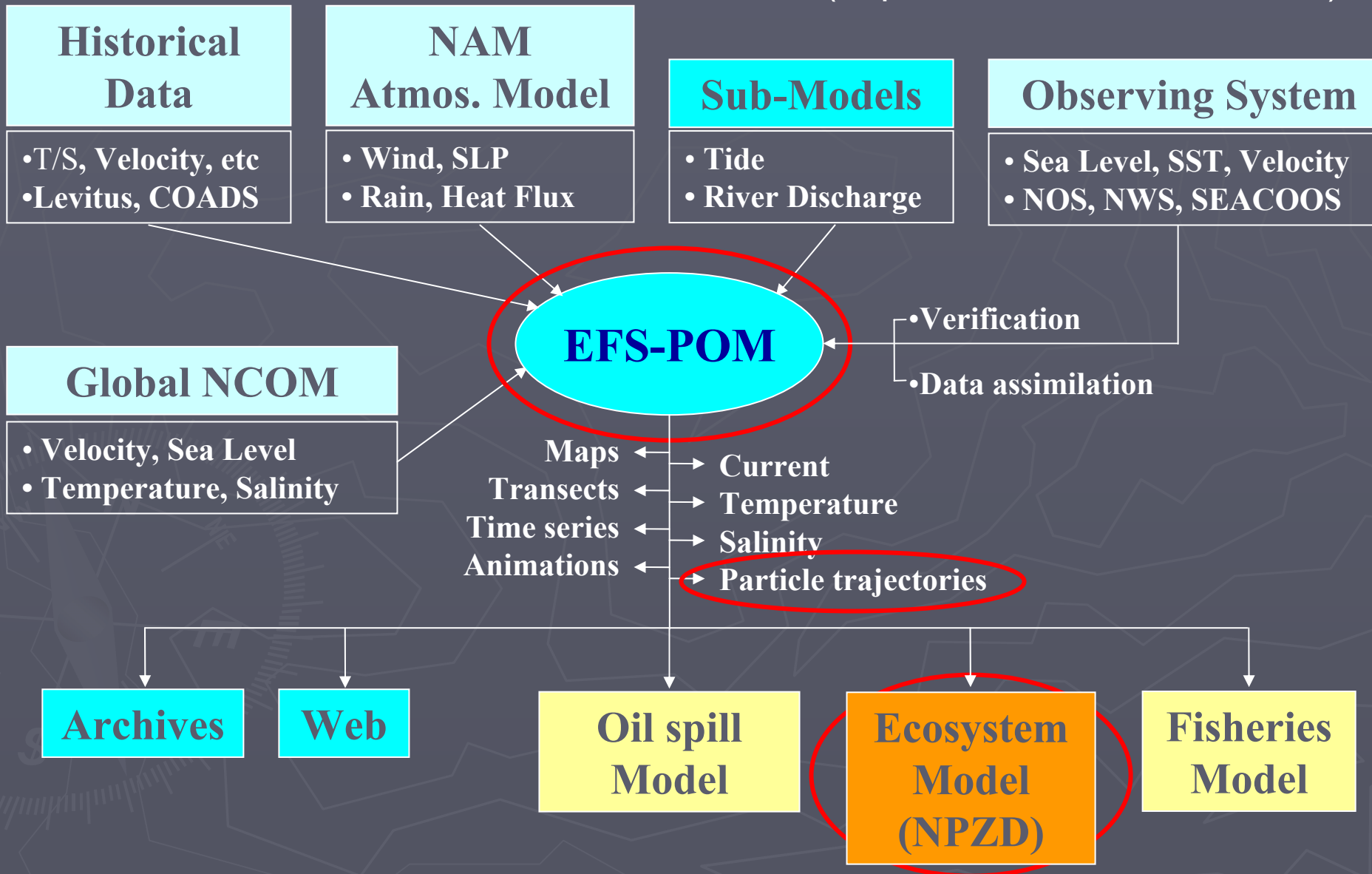
SEACOOS DOMAIN AND OCEAN MODELS

(www.seacoos.org)



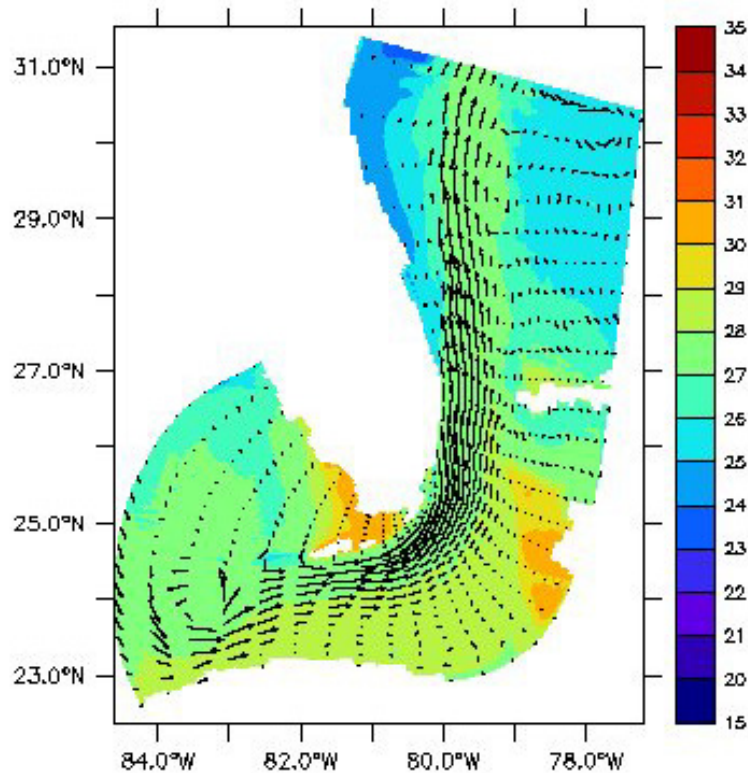
EAST FLORIDA SHELF INFORMATION SYSTEM

(<http://efsis.rsmas.miami.edu>)

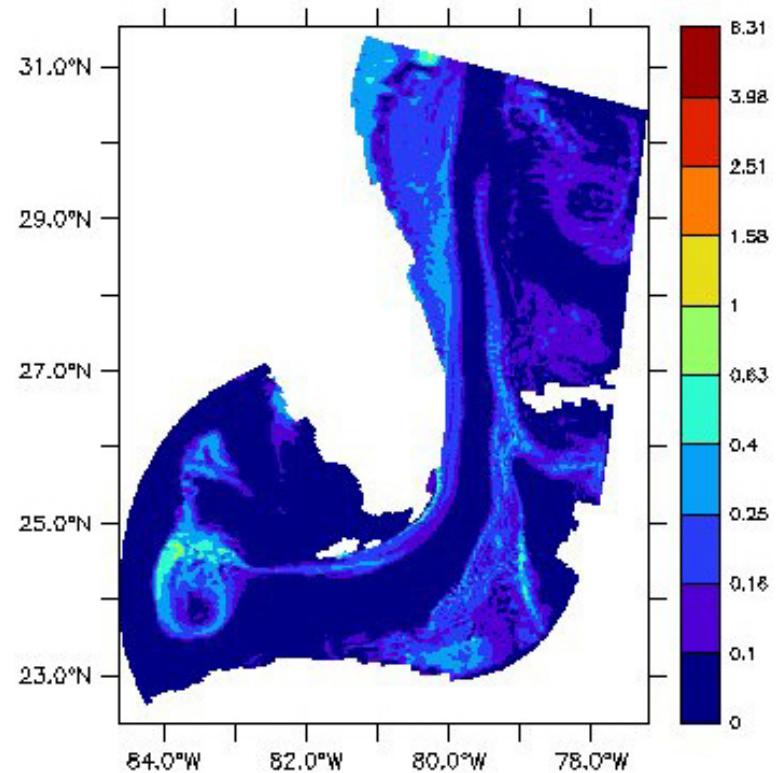


SIMULATED (EFS-POM) SYNOPTIC SURFACE MAPS

TIME : 01-JUN-2002 00:00

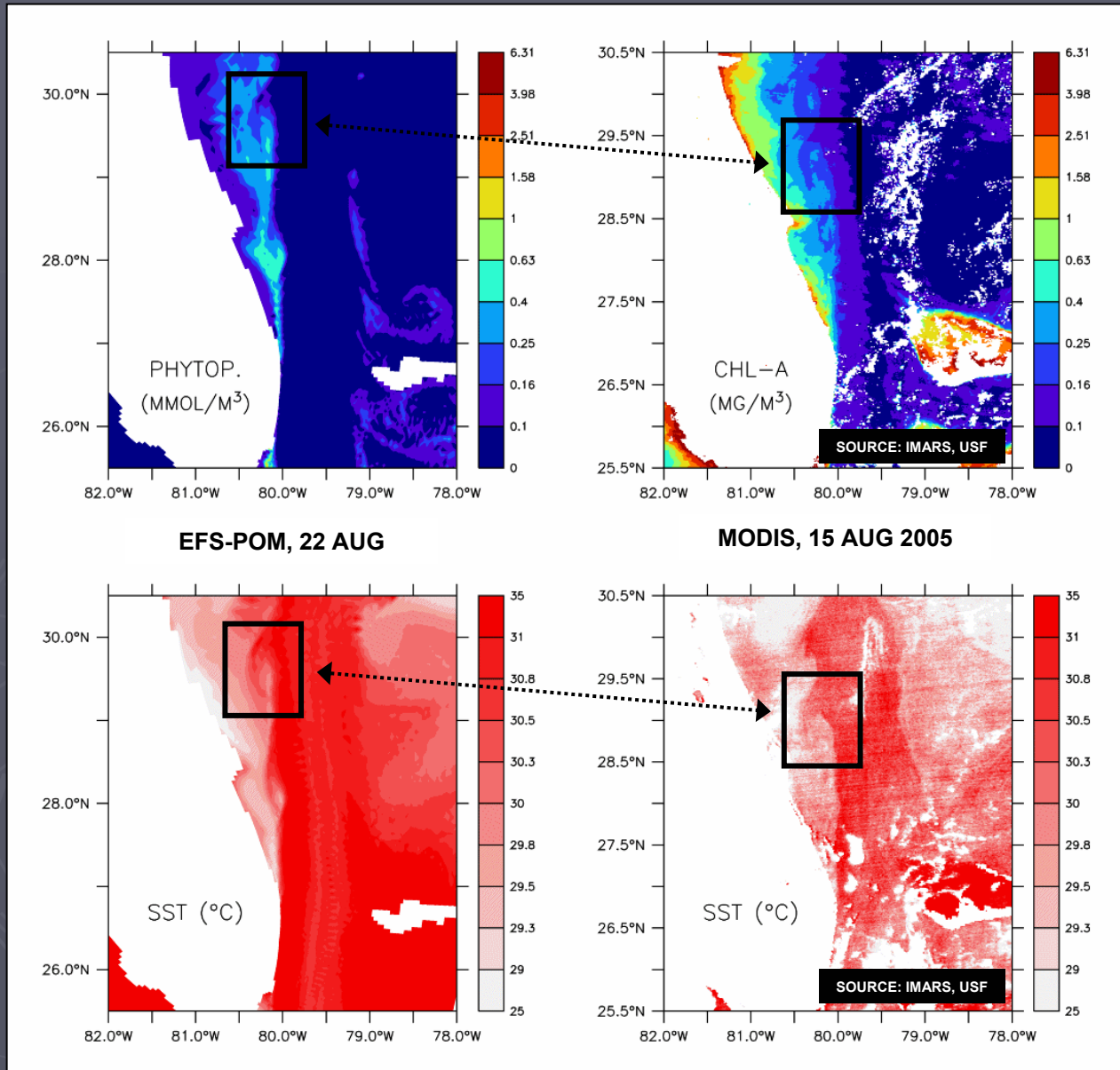


SURFACE TEMPERATURE (°C)

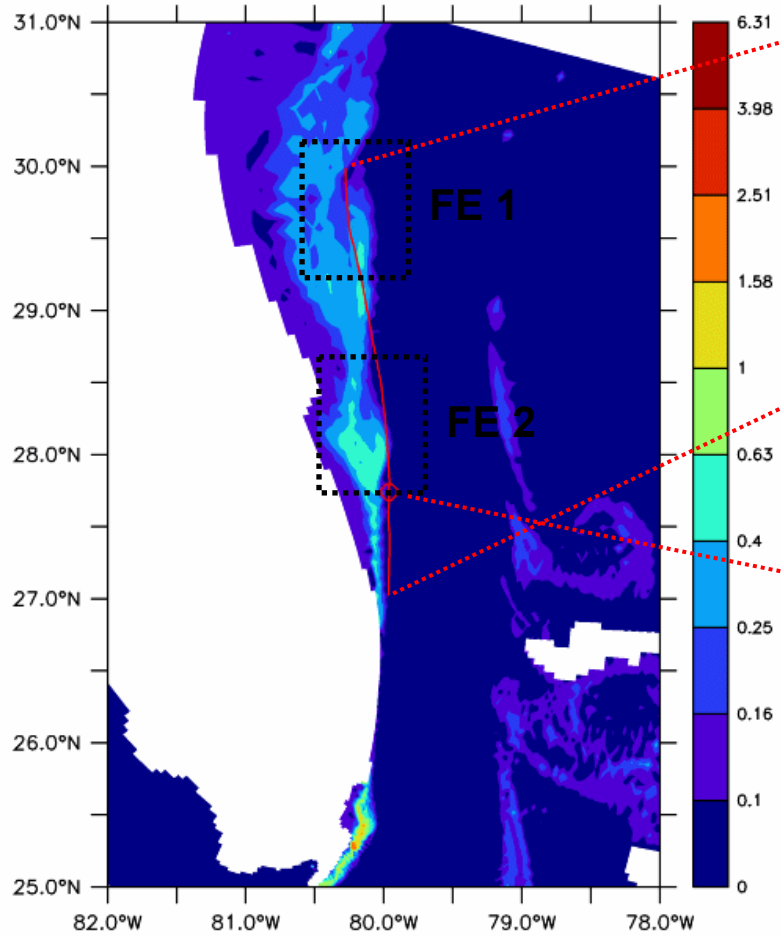


SURFACE PHYTOPLANKTON (mmol/m³)

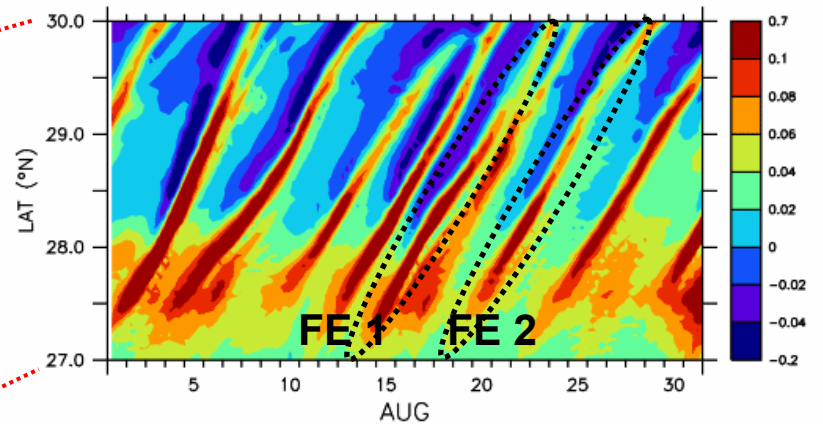
FLORIDA CURRENT FRONTAL EDDIES: MODEL VS. OBSERVATIONS



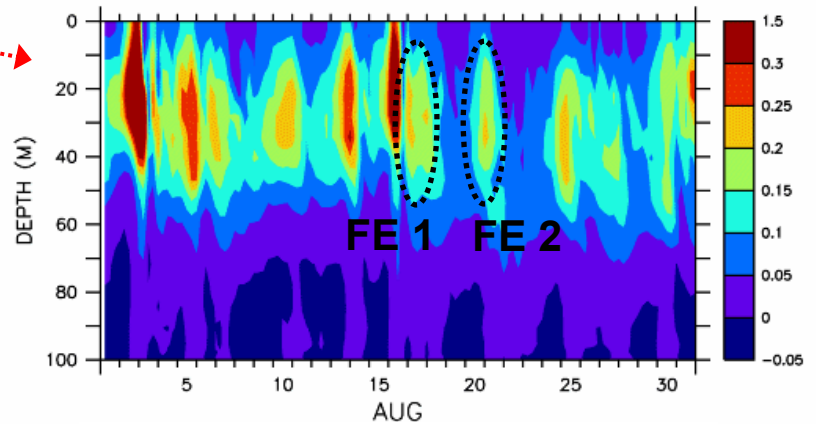
PHYTOPLANKTON CONCENTRATION AND CROSS-SHELF FLUX



SURFACE PHYTOPLANKTON, 22 AUG

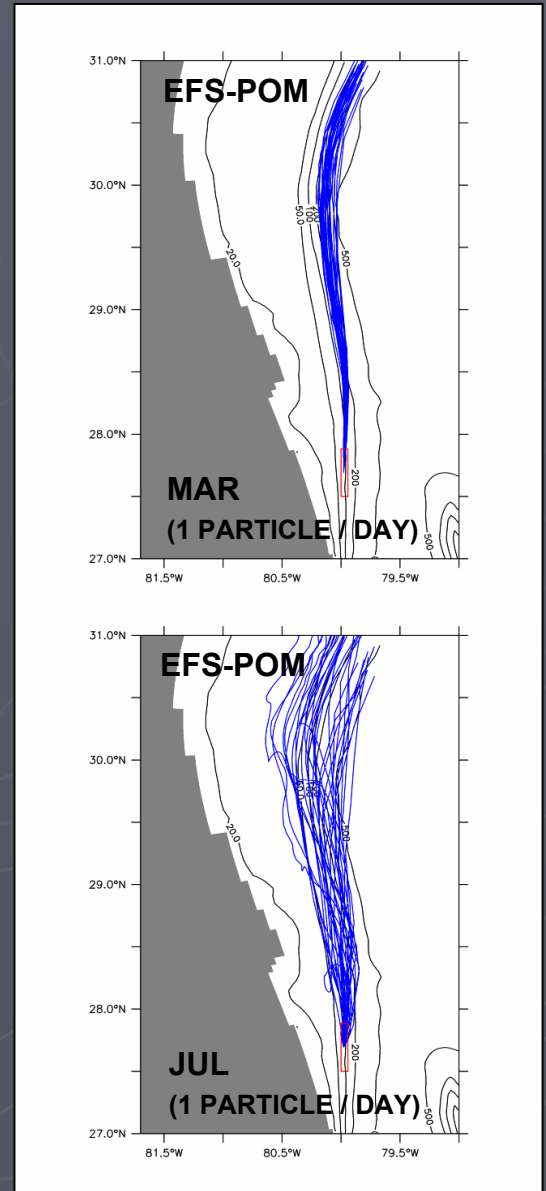
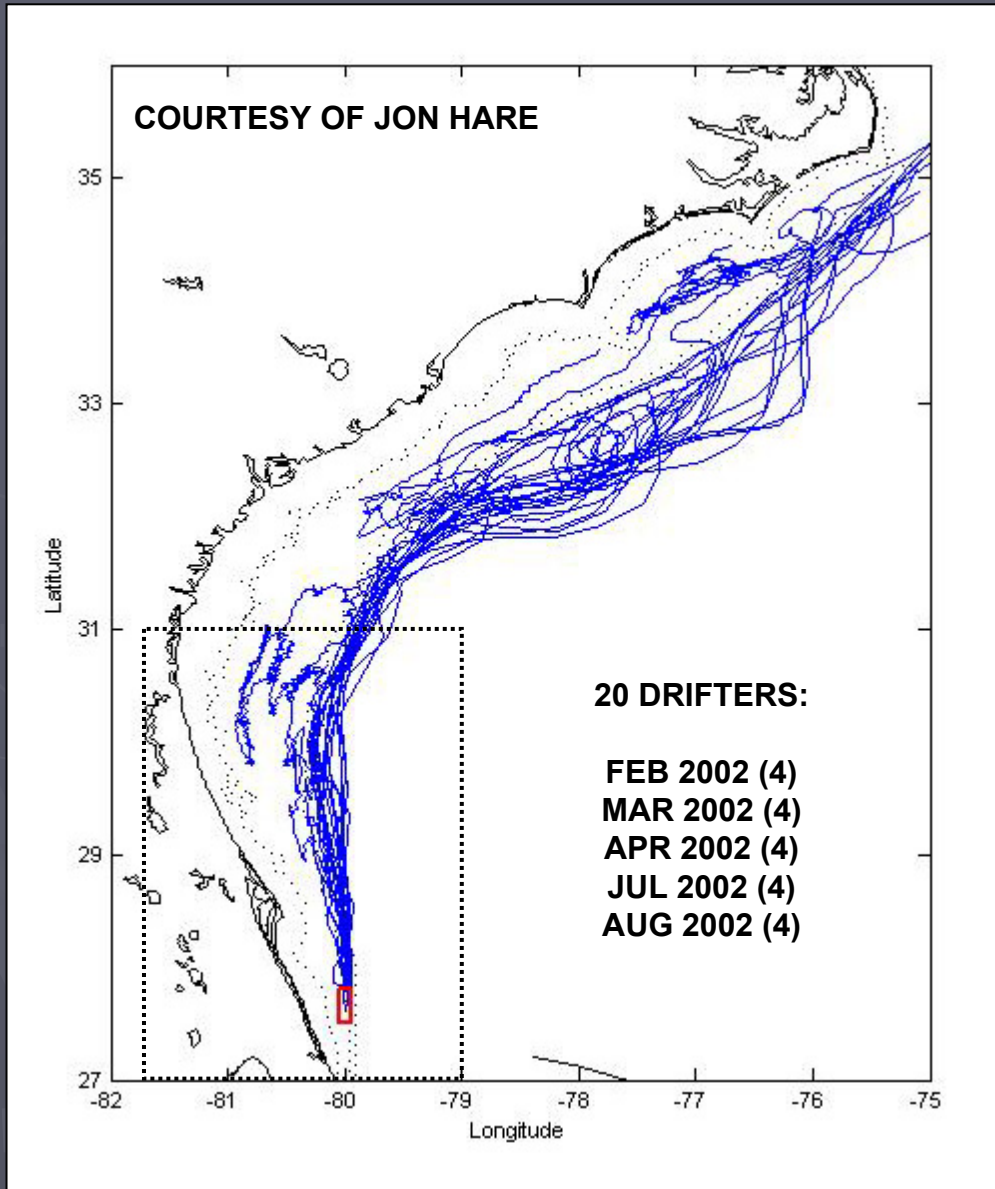


PHYTOPLANKTON CROSS-SHELF FLUX
100-M ISOBATH, DEPTH-INTEGRATED



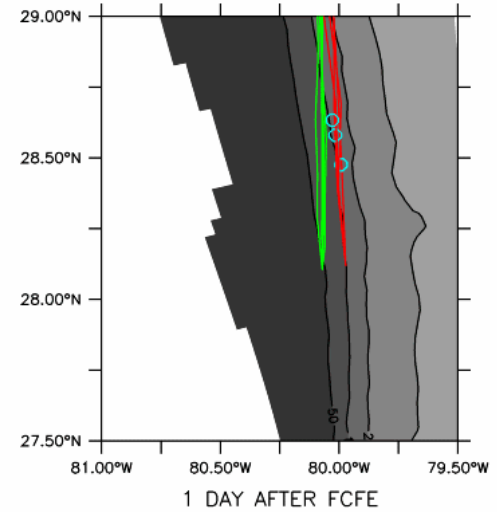
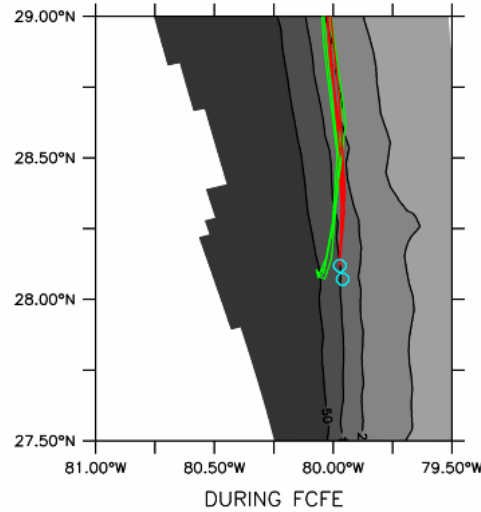
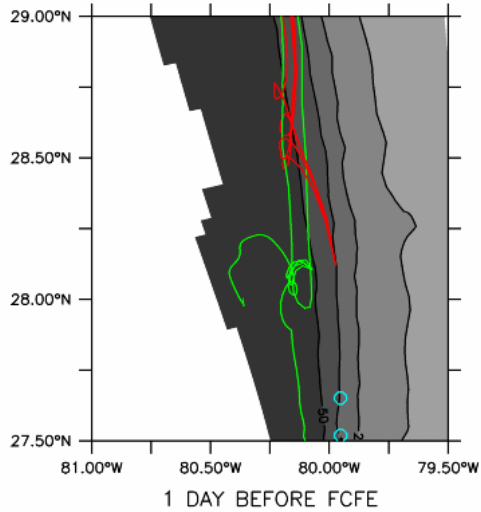
PHYTOPLANKTON CROSS-SHELF FLUX
OCULINA BANK

NEAR-SURFACE TRAJECTORIES: MODEL VS. OBSERVATIONS

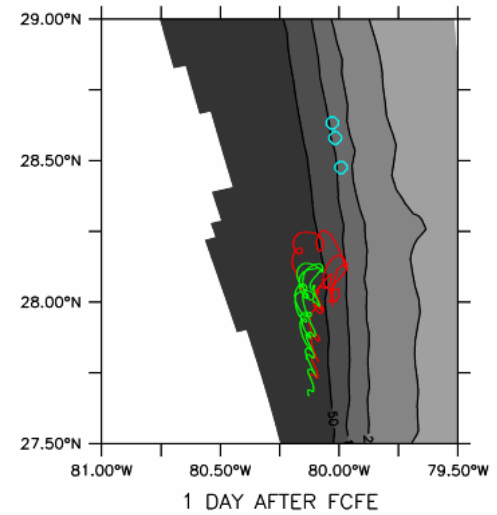
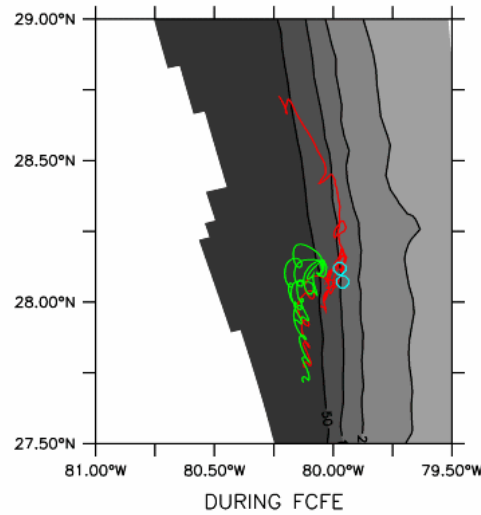
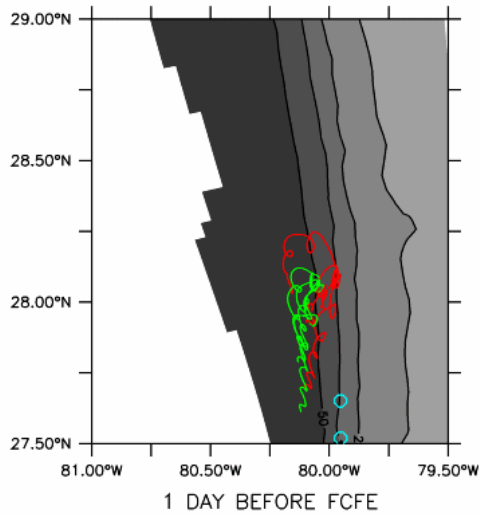


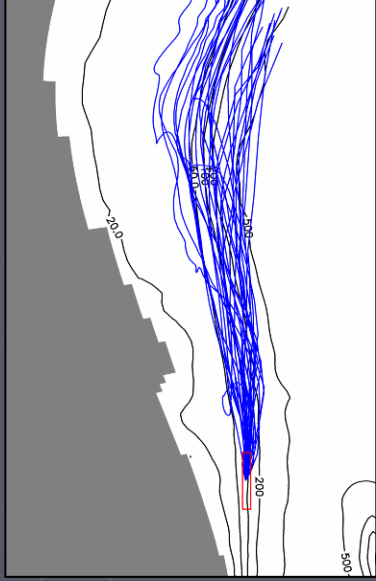
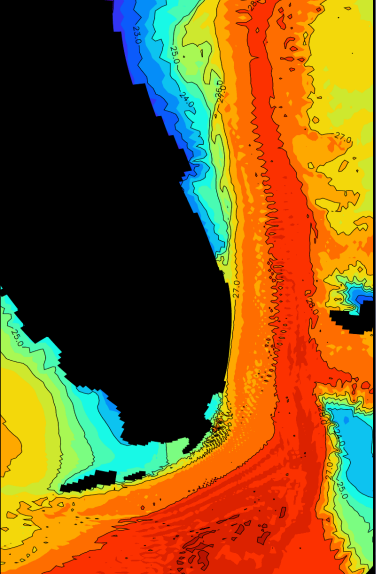
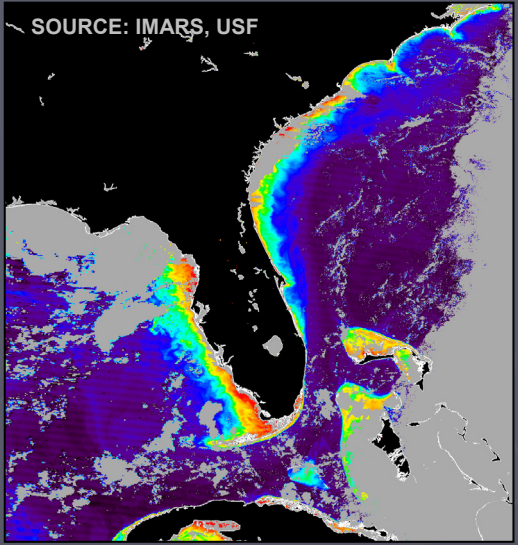
FRONTAL EDDIES INFLUENCE ON PARTICLE TRAJECTORIES

EFS-POM: SURFACE TRAJECTORIES

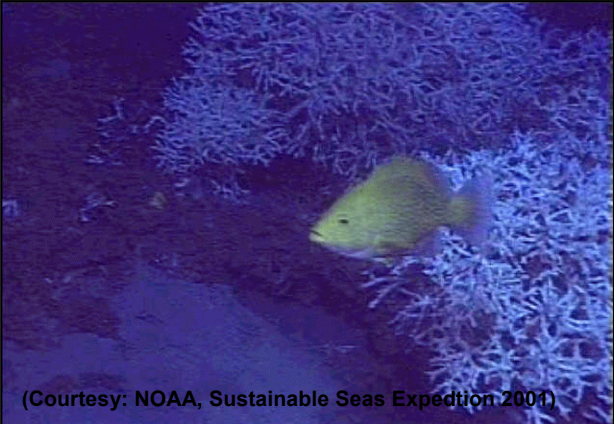


EFS-POM: BOTTOM TRAJECTORIES





**ECOSYSTEM-BASED
MANAGEMENT**



ECOLOGICAL FORECASTING FOR THE *OCULINA* BANK REGION (ECOFOR 06 Proposal)

- Improve and validate real-time coastal ocean circulation model
- Integrate real-time ecosystem model (NPZD)
- Integrate spatial dynamics multispecies fisheries model
- Conduct real-time in-situ observations (currents, T, S, Chl, DO)

- Characterize biophysical variability of benthic and pelagic habitats
- Estimate dispersal-retention pathways for coral and fish larvae
- Provide guidance on optimal sampling strategy
- Provide simulations for various change scenarios