June 12, 2003:

The Mississippi River discharge now appears to be offshore of the Tortugas (about 20nm to the south) as determined from the current RSMAS R/V Walton Smith hydrographic survey (organized by Tom Lee, RSMAS/UM). There is a layer of low salinity about 20 m thick that ranges from 35.3 at the surface to Gulf Stream salinity (36 or more) at 20 m. The low salinity has not appeared yet in the Keys but is being rapidly carried to the east, remaining still offshore. The Florida Current front appears to be in an offshore position in the lower and middle keys so the low salinity waters may not actually get close to the keys coastal waters until they reach the upper Keys around Key Largo where the Florida Current is normally closer to the reef tract.

Sea Surface HYCOM Salinity (SSS) computed by the model (http://hvcom.rsmas.miami.edu/ocean prediction.html) and synthesized by Villy Kourafalou (RSMAS/UM) for use in the regional HYCOM application in the Florida Straits and satellite chlorophyll data from the NOAA Coast Watch Harmful Algal Bloom Bulletin (http://coastwatch.noaa.gov/hab/bulletins ms.htm) prepared by Richard Stumpf (NOAA/NOS) clearly show that the Loop Current has been in a position near the Mississippi River plume during May with a subsequent Loop Current Ring forming late May. Excess low salinity/high chlorophyll waters were observed in the northwest Florida shelf. The advection of the low salinity waters toward the Florida Straits is evident in model results and satellite data. The low salinity waters were first transported through the elongated Loop Current, then around the detached Ring and along the smaller Loop Current. Right now it is not clear if they are going to reach the Keys.



layer=01 salinity date: may 30, 2003 [02.6H]





layer=01 salinity date: jun 08, 2003 [02.6H]



## HYCOM model SSS results from the North Atlantic/Gulf of Mexico ongoing simulation

## NOAA CoastWatch Harmful Algal Blooms (HAB) bulletin May 1, 2003



The above are the personal estimation of RSMAS/MPO scientists, based on RSMAS and NOAA numerical modeling and observational activities.

For more information on the regional HYCOM application in the Florida Straits, please contact:

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