ROFFS™

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September 17, 2010

Attached is the first draft results of our combined observations of the surface oil stemming from the Deepwater Horizon Oil Spill from May through July, 2010. This is where we directly observed the oil signature at the surface as the event unfolded. As many people are planning research cruises related to the surface oil, we felt that it is important to circulate this analysis. Since the initial real-time analyses were conducted additional satellite data and algorithms have become available that allows for improved visualization. Thus, over time the entire surface spill episode will be re-evaluated as a function of time and funding. However, we do not anticipate that major changes will be made.

It is likely we will send other analyses out which include this surface oil distribution data along with the shape files of the water that touched the oil (oil - water - dispersant mixture) that we had been monitoring during the surface oil episode (April – August, 2010). It is important to realize that some people want to sample parts of the ocean that were not touched by contaminated water at any concentration. While it appears that the initial surface episode is mostly over, we continue to monitor the conditions on a daily basis for oil and oil degradation products that are being upwelled into the surface waters or returned to the ocean from the bays and inlets. We will continue to evaluate the ocean currents for work related to the subsurface oil cloud plume that extends from the DeSoto Canyon area to the offshore waters near the Texas - Louisiana border.

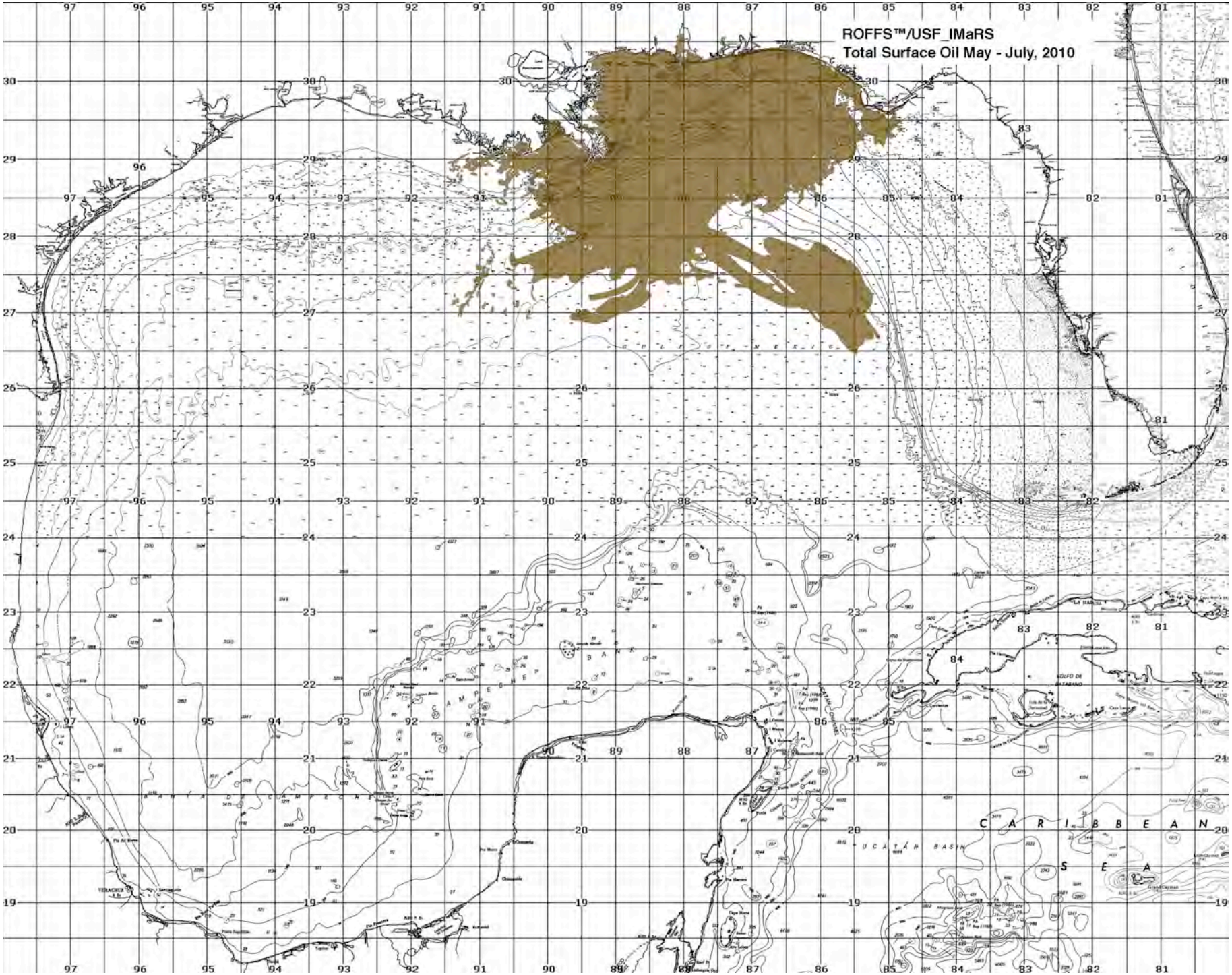
The attached analysis is derived from a plethora satellites (United States and European) with a variety of spectral and spatial resolutions. This includes observations from NASA's visible (RGB, other ocean color, and glint reflection), NOAA and NASA's infrared, and European synthetic aperture radar (SAR) sensors. This image shows where we directly observed the oil signature at the surface. Due to aspects related to clouds, satellite pass angle, and satellite pass coverage it is necessary to fuse the data together. The fusion of these satellite data to a single surface oil data product is an innovative method. We have supportive in situ validation data from a variety of researchers and fishermen. We have kept documentation and have maintained the chain of custody of the data and analyses with password security.

We thank everyone for their help on this collaborative effort including NOAA for making available the polar orbiting infrared data, NASA for the Terra and Aqua ocean color and infrared data, the University of Miami CSTARS who provided most of the SAR data (TerraSARX, Envisat, Radarsat1, Palsar,Ers2, CosmoSkymed_1, _2, _3), and the European Space Agency for making available Envisat ocean color, infrared, and SAR data.

We would like to collaborate with as many people as possible on a wide variety of subjects including, but not limited to fisheries oceanography, marine chemistry, and bottom geochemistry. If you use this image please provide the necessary credit. Also please distribute this to your colleagues and others. We apologize in advance for other copies of this that you are likely to receive over the next several days.

Regards,

Mitchell A. Roffer and Gregory Gawlikowski (ROFFS™) and Frank Muller-Karger (USF IMaRS)


ROFFS™/USF_IMaRS
Total Surface Oil May - July, 2010
GULF OF MEXICO
BANK
CAMPECHE
BAHIA DE CAMPECHE
YUCATAN BASIN
CARIBBEAN
SEA
GOLFO DE BATABANO
LA HABANA