Tampa Bay Regional Planning Council Meeting

14 June 2010

CAPT Tim Close, USCG

Nearshore Surface Oil Forecast Deepwater Horizon MC252

NOAA/NOS/OR&R

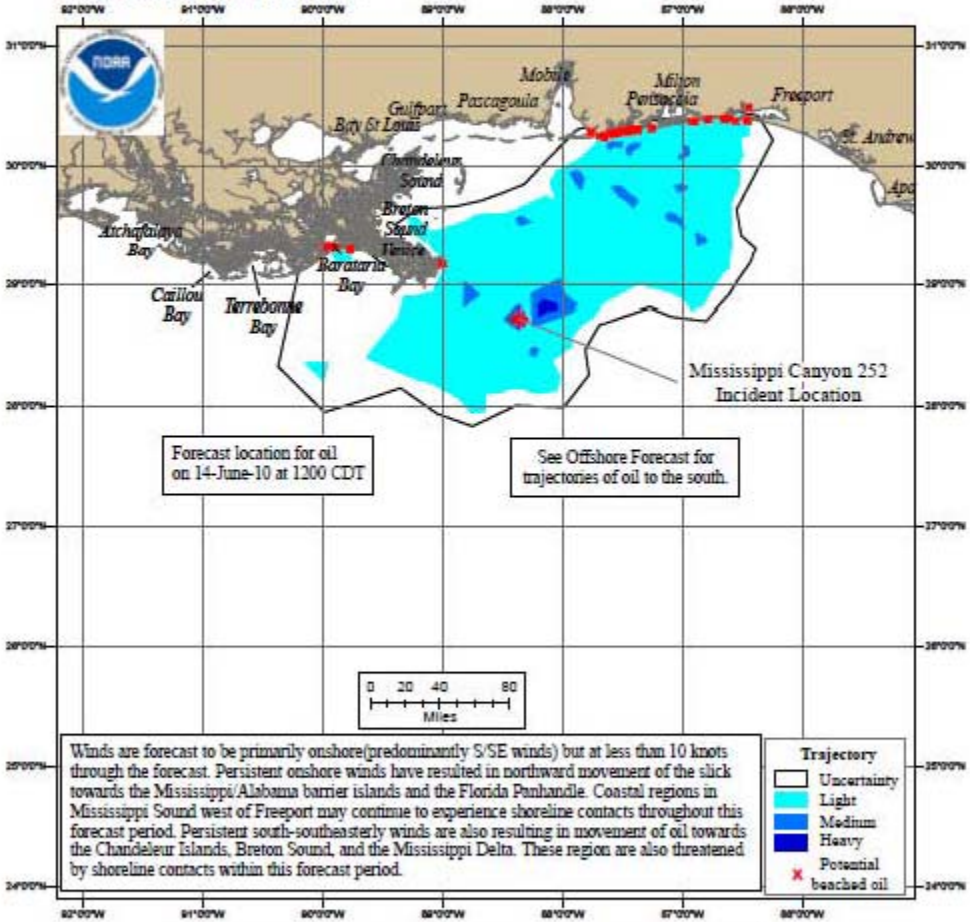
Nearshore

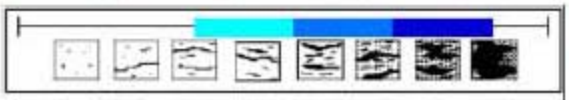
Estimate for: 1200 CDT, Monday, 6/14/10

Date Prepared: 2100 CDT, Sunday, 6/13/10

This forecast is based on the NWS spot forecast from Sunday, June 13 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, NAVO/NRL) and HFR measurements. The model was initialized from Sunday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.

Today, 6/14





this scale bar shows the meaning of the distribution terms at the current time

Next Forecast: June 14th PM

Nearshore Surface Oil Forecast Deepwater Horizon MC252

NOAA/NOS/OR&R

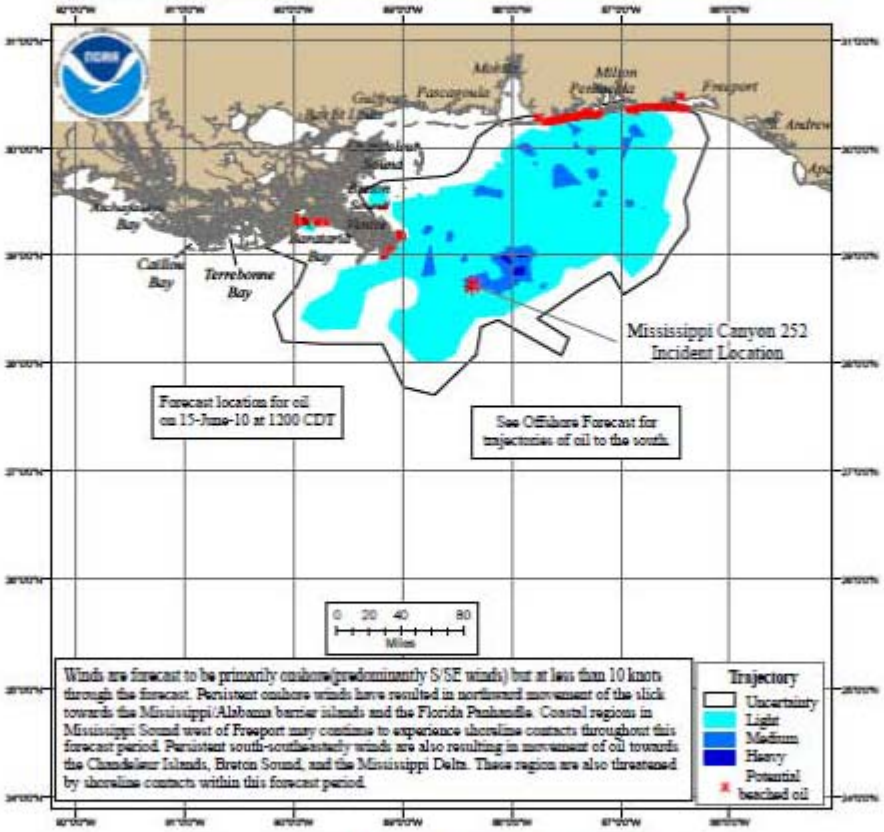
Nearshore

Estimate for: 1200 CDT, Tuesday, 6/15/10

Date Prepared: 2100 CDT, Sunday, 6/13/10

Tuesday, 6/15

This forecast is based on the NWS spot forecast from Sunday, June 13 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, NAVO/NRL) and HFR measurements. The model was initialized from Sunday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.



this scale bar shows the meaning of the distribution terms at the current time

Next Forecast: June 14th PM

Nearshore Surface Oil Forecast Deepwater Horizon MC252

NOAA/NOS/OR&R

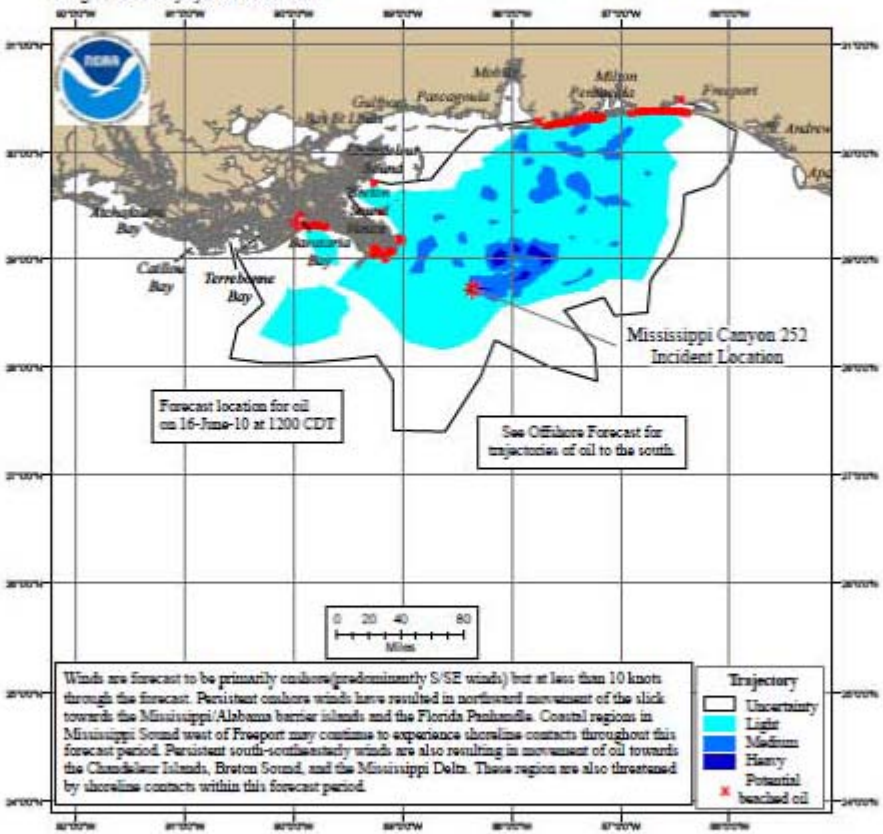
Nearshore

Estimate for: 1200 CDT, Wednesday, 6/16/10

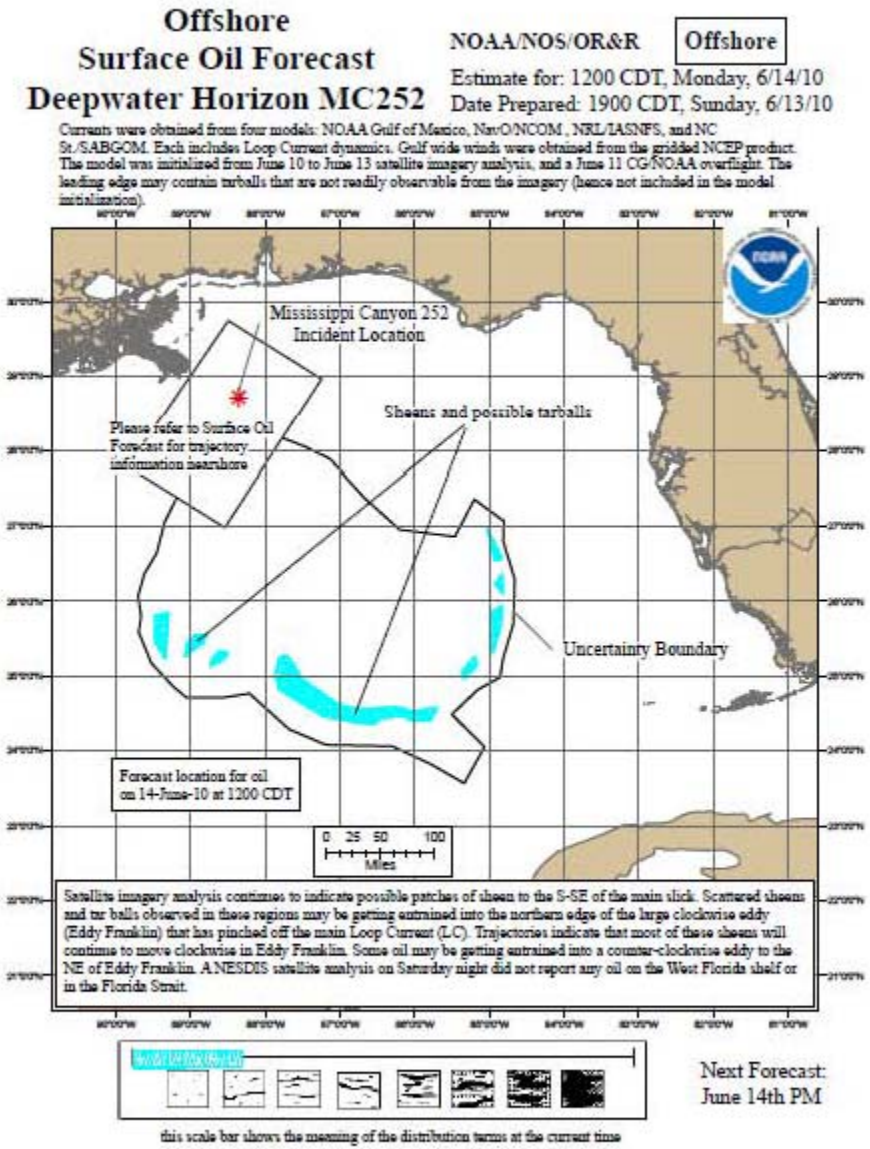
Date Prepared: 2100 CDT, Sunday, 6/13/10

Wednesday, 6/16

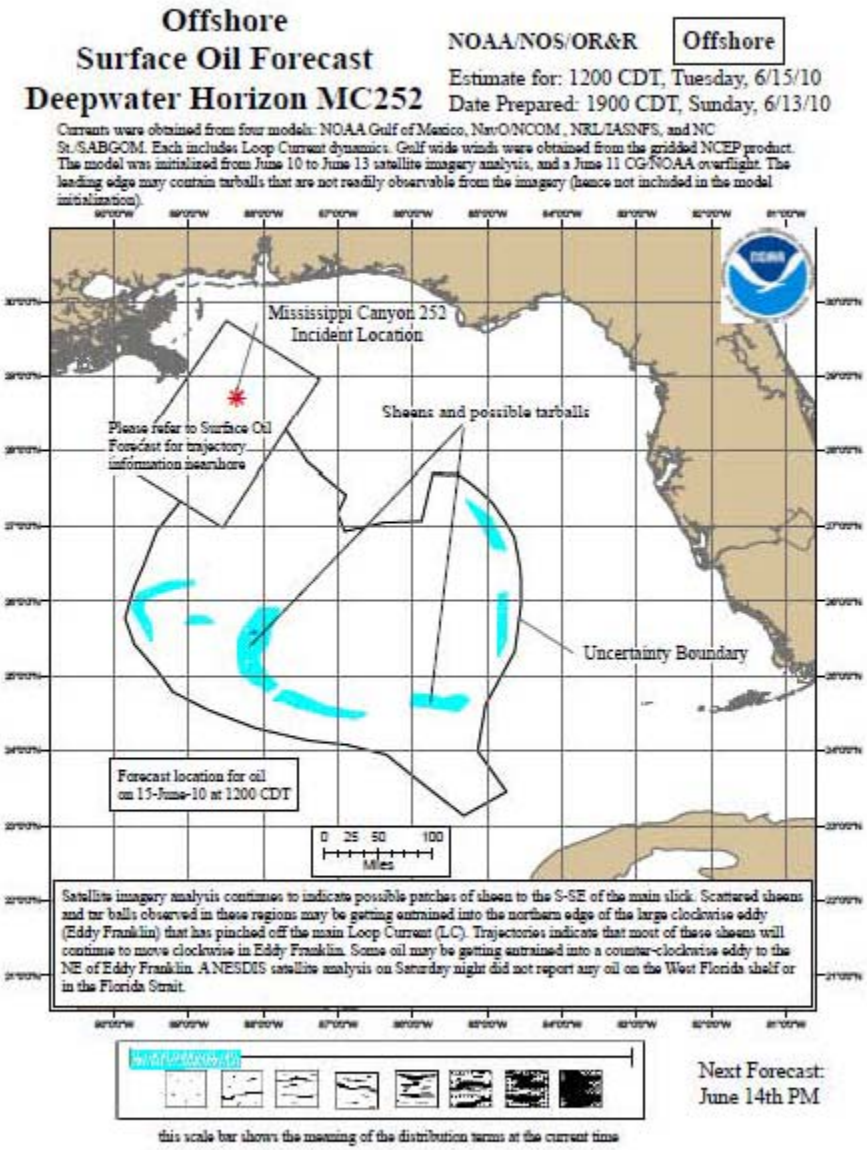
This forecast is based on the NWS spot forecast from Sunday, June 13 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, NAVO/NRL) and HFR measurements. The model was initialized from Sunday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.


Mobile
Pascagoula
Gulfport
Biloxi
Mobile Bay
Fort Morgan
Gulf Shores
Orange Beach
Perdido Pass
Pensacola
Fort Pickens
Navarre
Destin
Fort Walton Beach
Panama City
Mexico Beach
Apalachicola Bay
Carabelle
Cedar Key
Crystal River
Tampa Bay
Sarasota Bay
Venice
Cape Romano
Marco Island
Everglades City
Cape Sable
Cape Florida
Key West
Dry Tortugas
Cape Sable
Cape Hatteras
Cape Lookout
Cape Fear
Cape Canaveral
Cape Kennedy
Cape Fear
Cape Hatteras
Cape Lookout
Cape Fear
Cape Canaveral
Cape Kennedy

Today, 6/14


Offshore
Surface Oil Forecast
Deepwater Horizon MC252
NOAA/NOS/OR&R
Offshore
Estimate for: 1200 CDT, Monday, 6/14/10
Date Prepared: 1900 CDT, Sunday, 6/13/10
Currents were obtained from four models: NOAA Gulf of Mexico, NavO/NCOM, NRL/IASNFS, and NC St./SABGOM. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from June 10 to June 13 satellite imagery analysis, and a June 11 CG/NOAA overflight. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).
Mississippi Canyon 252
Incident Location
Please refer to Surface Oil Forecast for trajectory information nearshore
Sheens and possible tarballs
Uncertainty Boundary
Forecast location for oil on 14-June-10 at 1200 CDT
0 25 50 100
Miles
Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that most of these sheens will continue to move clockwise in Eddy Franklin. Some oil may be getting entrained into a counter-clockwise eddy to the NE of Eddy Franklin. A NESDIS satellite analysis on Saturday night did not report any oil on the West Florida shelf or in the Florida Strait.
Next Forecast:
June 14th PM
this scale bar shows the meaning of the distribution terms at the current time

Tuesday, 6/15


Offshore
Surface Oil Forecast
Deepwater Horizon MC252
NOAA/NOS/OR&R
Offshore
Estimate for: 1200 CDT, Tuesday, 6/15/10
Date Prepared: 1900 CDT, Sunday, 6/13/10
Currents were obtained from four models: NOAA Gulf of Mexico, NavO/NCOM, NRL/IASNFS, and NC St./SABGOM. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from June 10 to June 13 satellite imagery analysis, and a June 11 CG/NOAA overflight. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).
Mississippi Canyon 252
Incident Location
Please refer to Surface Oil Forecast for trajectory information nearshore
Sheens and possible tarballs
Uncertainty Boundary
Forecast location for oil on 15-June-10 at 1200 CDT
0 25 50 100
Miles
Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that most of these sheens will continue to move clockwise in Eddy Franklin. Some oil may be getting entrained into a counter-clockwise eddy to the NE of Eddy Franklin. A NESDIS satellite analysis on Saturday night did not report any oil on the West Florida shelf or in the Florida Strait.
Next Forecast:
June 14th PM
this scale bar shows the meaning of the distribution terms at the current time

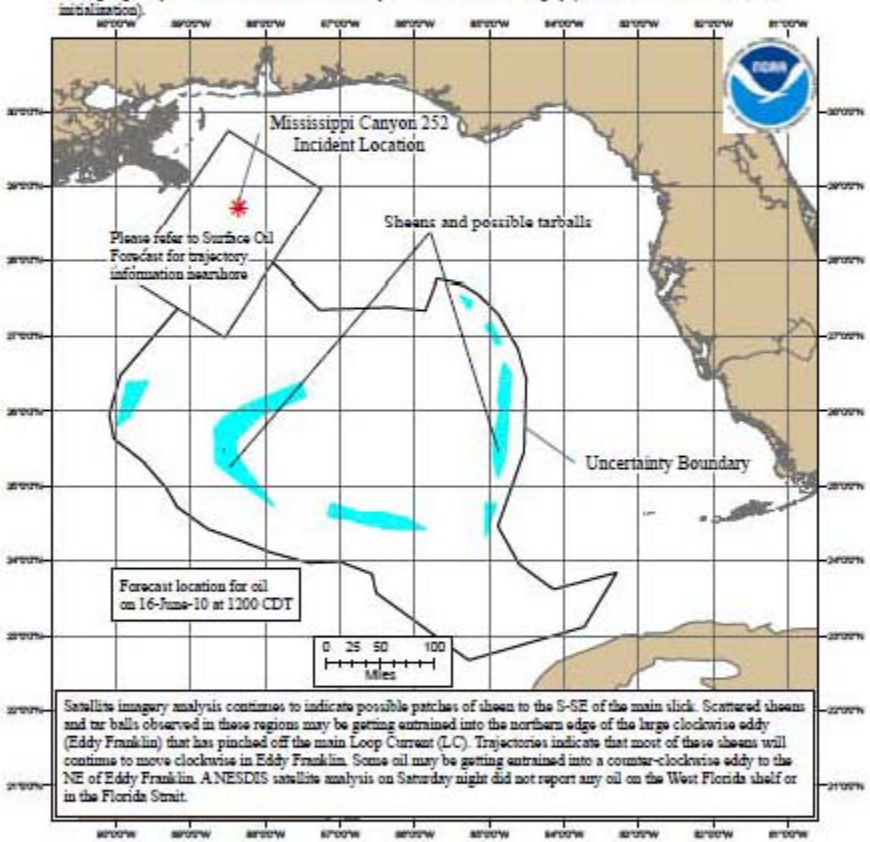
Offshore Surface Oil Forecast Deepwater Horizon MC252

NOAA/NOS/OR&R **Offshore**

Estimate for: 1200 CDT, Wednesday, 6/16/10
Date Prepared: 1900 CDT, Sunday, 6/13/10

Wednesday, 6/16

Currents were obtained from four models: NOAA Gulf of Mexico, NavO/NCOM, NRL/IASNFS, and NC St./SABGOM. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from June 10 to June 13 satellite imagery analysis, and a June 11 CG/NOAA overflight. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).



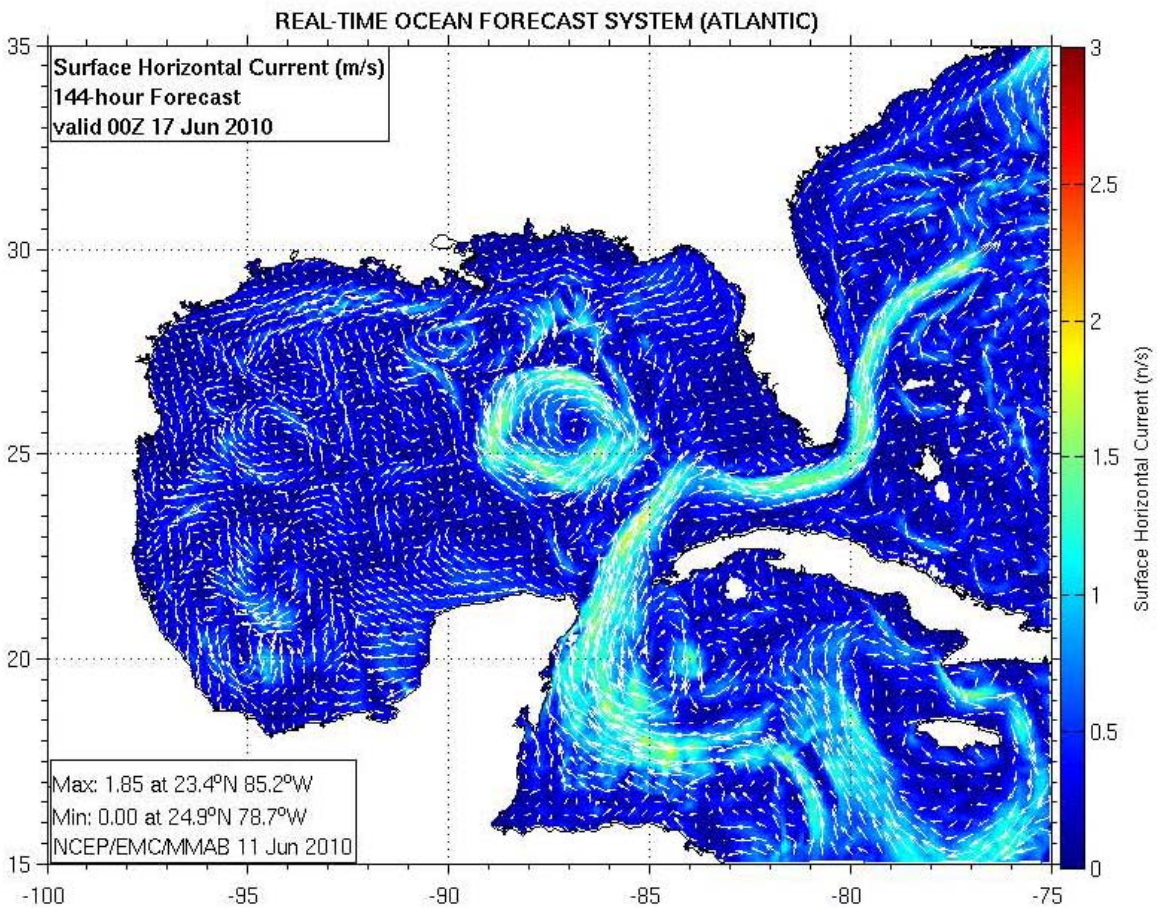
Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that most of these sheens will continue to move clockwise in Eddy Franklin. Some oil may be getting entrained into a counter-clockwise eddy to the NE of Eddy Franklin. A NESDIS satellite analysis on Saturday night did not report any oil on the West Florida shelf or in the Florida Strait.

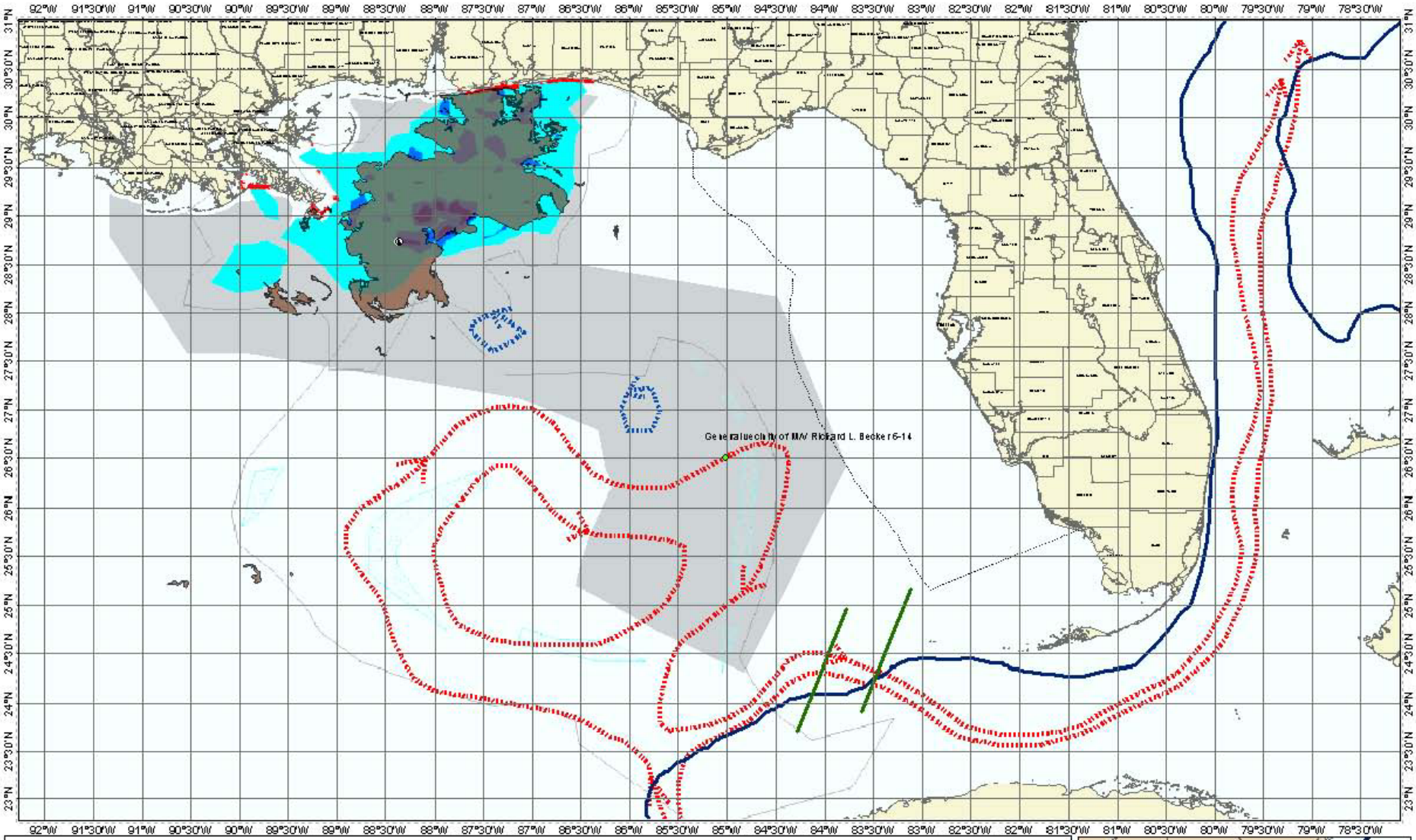
Next Forecast: June 14th PM

this scale bar shows the meaning of the distribution terms at the current time

Loop current to eddy connection doesn't appear stable. Consensus is that complete separation of the eddy from the loop is at least a month away. (Barker, NOAA, pers. Comm.)

Small entraining feature to north visible in RTOFS through 6/17





Location of Oil Release

Sentry Plan Line June 14

Naval Oceanography Office Loop Current for June 13

Loop Current June 13, 2010

Counter-Clockwise Eddies June 13, 2010

Trigger (94 miles)

Fishery Closure

Miles

0 40 80 120 160 200

NOAA 72hr Trajectory for June 16 @ 1100 EDT

Forecast Heavy

Forecast Medium

Forecast Light

Forecast Uncertainty

Forecast Light (Offshore)

Potential Beached Oil

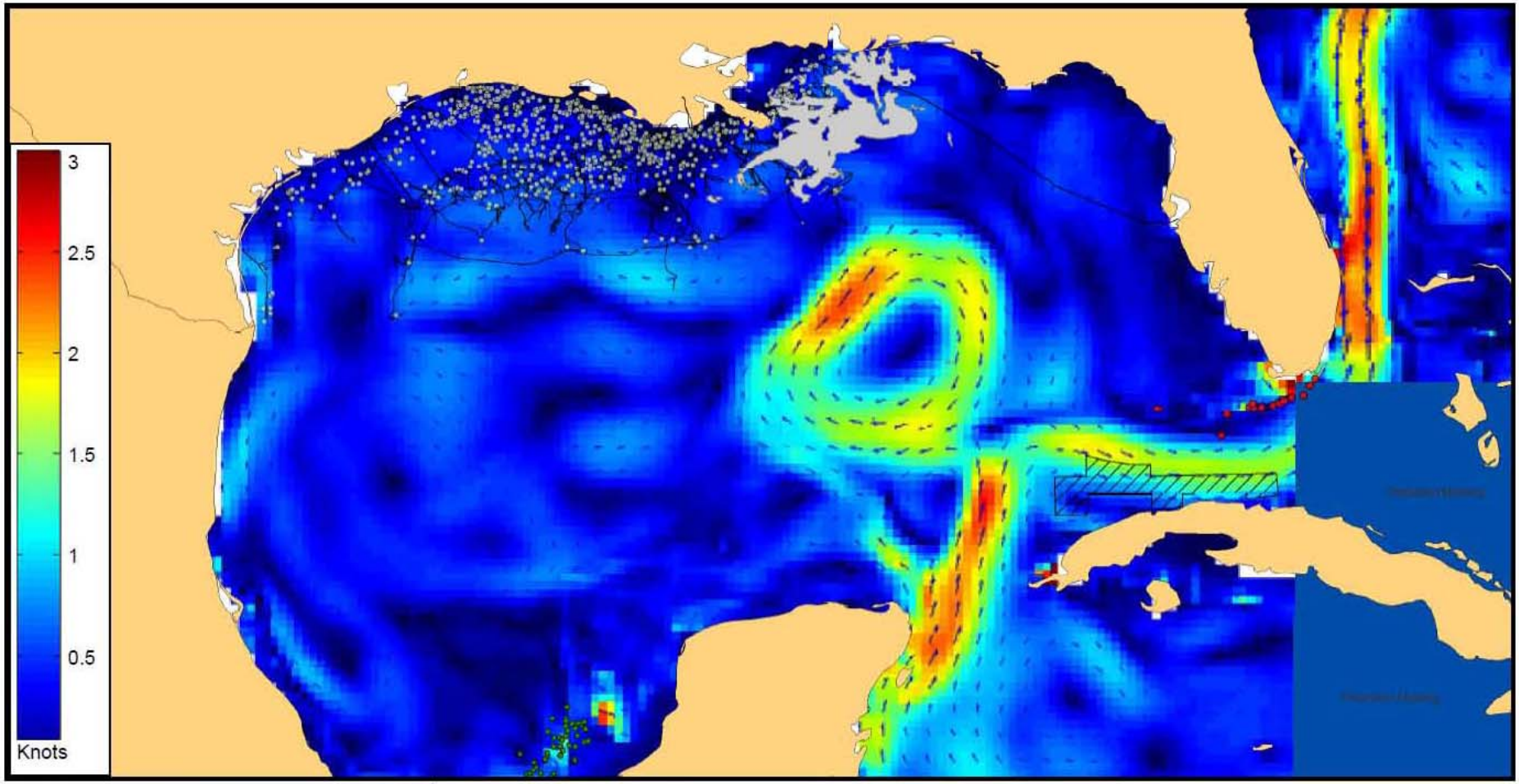
This scale bar shows the meaning of the distribution terms at the current time.
It depicts relative densities of oil distribution relative to classification (light to heavy). Source : NOAA

Experimental Environmental Analysis Composite June 14, 2010

FWRI- Center for Spatial Analysis
USF- Optical Oceanography Lab

24 Hour Loop Current Forecast 6/13/2010

U.S. Naval Oceanographic Office
Operational Global Ocean Model



- Mexican oil and gas fields (active)
- Incident Reports, as of June 4
- Satellite Derived (MODIS) Expected Oil Presence, as of June 12
- Cuban oil and gas fields (leased, activity unknown)
- U.S. registered oil platforms (active)
- U.S. registered pipelines (active)

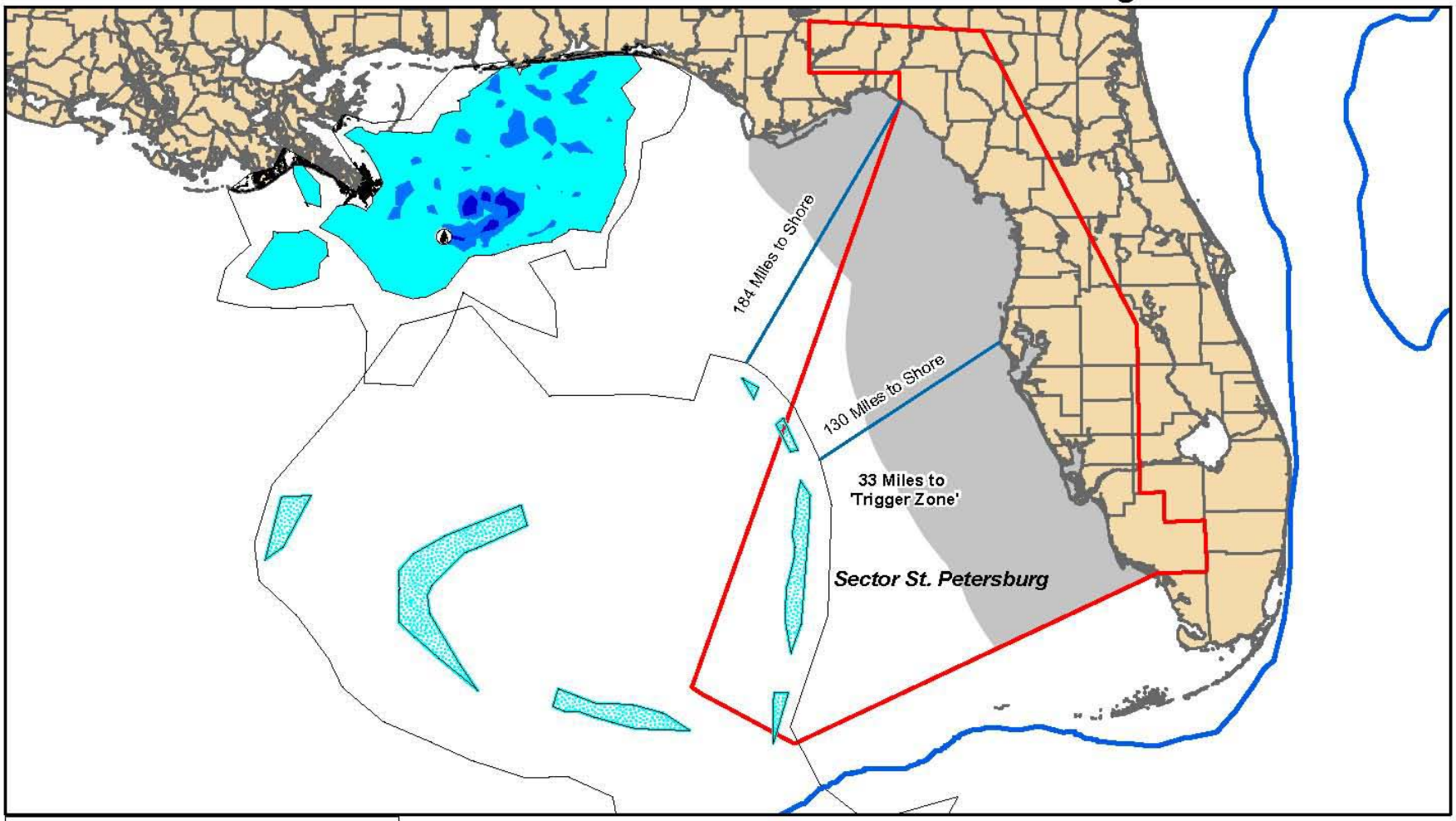
1:10,000,000

0 100 200 400 600 800 Miles

N

Sources:
"U.S. registered oil platforms and pipelines" was provided by the Minerals Management Service (MMS).
"Mexican oil and gas fields" was digitized from Petróleos Mexicanos' (PEMEX) self published report, "Las reservas de hidrocarburos de México, 1/1/2009" and should not be considered a complete representation.
"Cuban oil and gas fields" was digitized from a presentation by Cuba's state owned petroleum company (Cubapetroleo) titled "Current status of exploration/production activities in Cuba, 2/2/2006."

NOAA 72hr Trajectory for June 16, 2010 in Relation to USCG Sector St. Petersburg



Legend

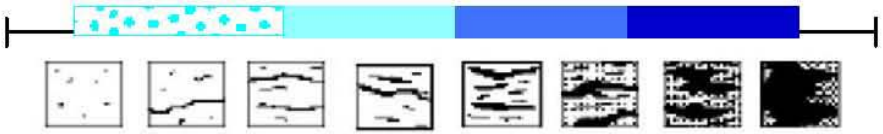
- Location of Oil Release
- Naval Oceanographic Office Loop Current for June 14

NOAA 72hr Offshore Trajectory for June 16 @ 1300 EDT

- Forecast Uncertainty
- Forecast Light (Offshore)

NOAA 72hr Nearshore Trajectory for June 16 @ 1300 EDT

- Forecast Heavy
- Forecast Medium
- Forecast Light
- Forecast Uncertainty



This scale bar shows the meaning of the distribution terms at the current time.
It depicts relative densities of oil distribution relative to classification (light to heavy).
Source : NOAA

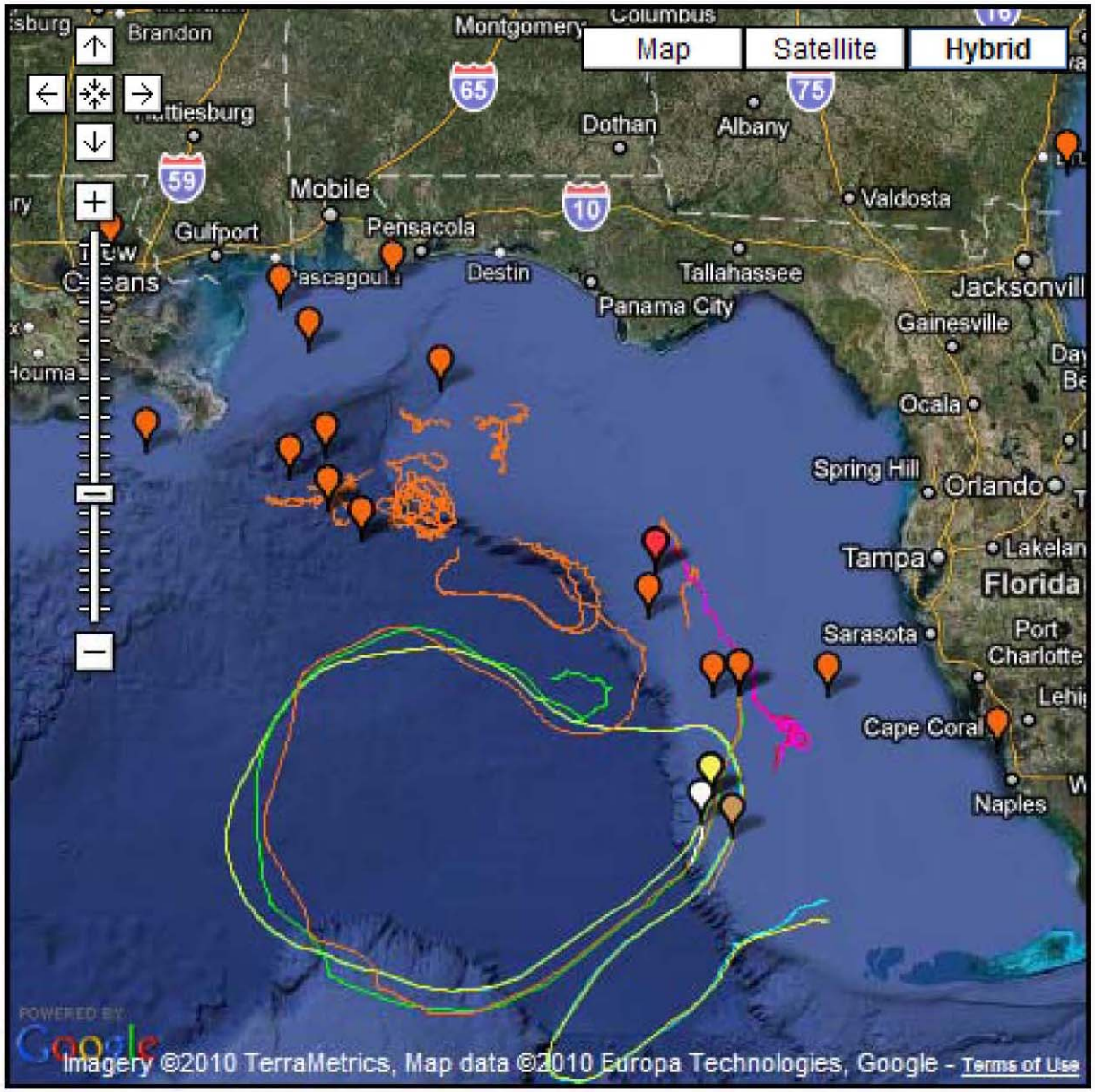
Fish and Wildlife Research Institute
Center for Spatial Analysis

N

USF tracking of all USCG and USF drifters in gulf.

None have moved into Florida current past keys.

Two have been entrained into waters north of Dry Tortugas moving toward Florida Bay.

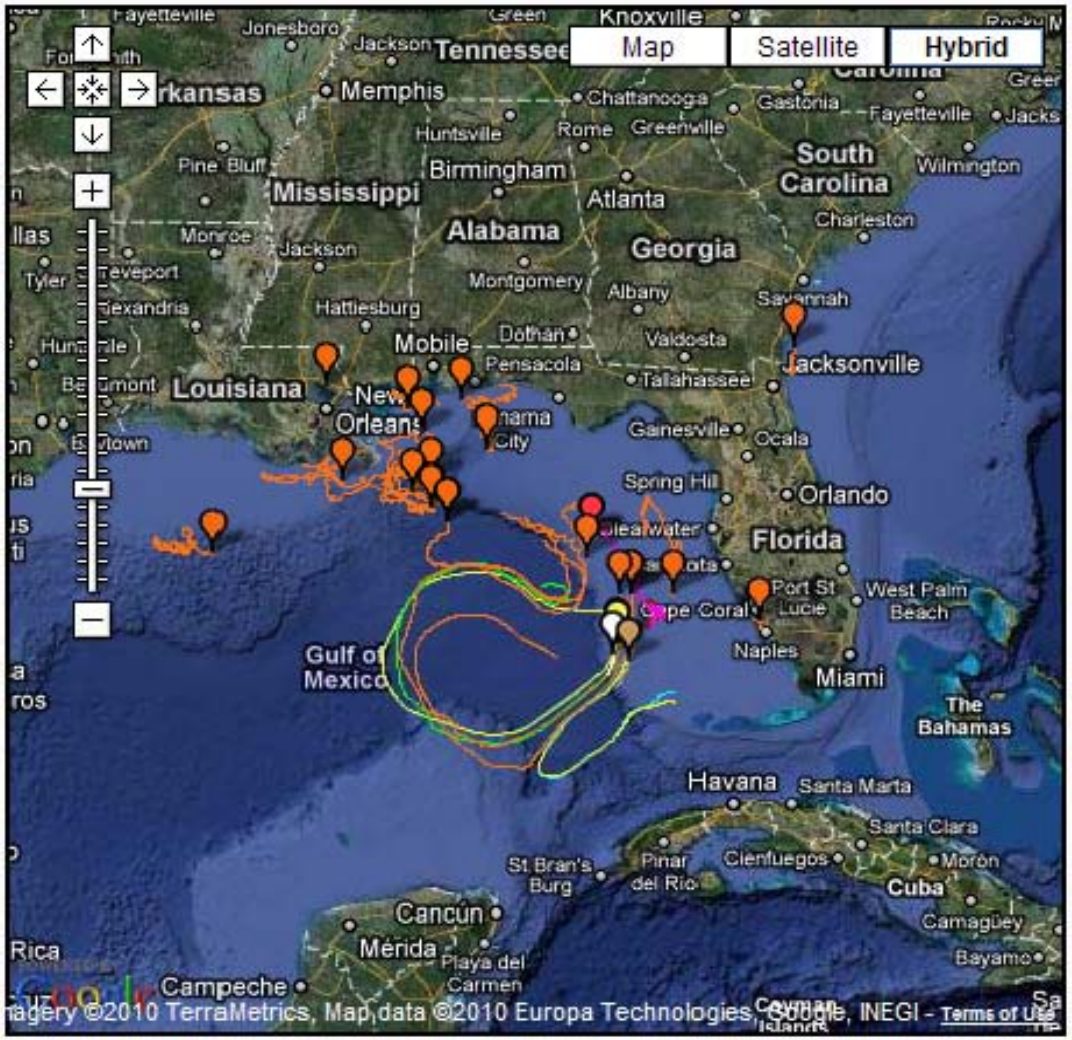


87795	87796	87797	87798	87799	87803	87806	CG-38898

Markers on map indicate deployment start location.
All Coast Guard deployed drifters are orange

Drifter updates from USF web

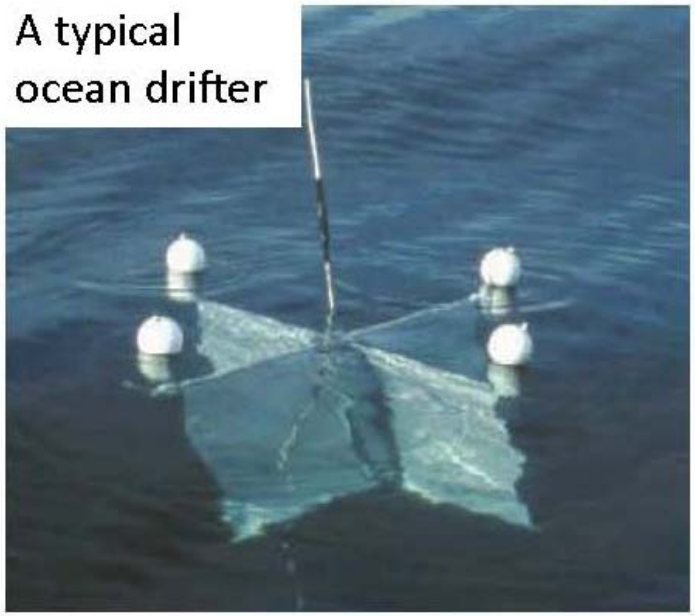
Note 87797 and 87798 on shelf in SE have slowed



87795	87796	87797	87798	87799	87803	87806	CG-38898

Markers on map indicate deployment start location.
All Coast Guard deployed drifters are orange

A typical ocean drifter



1997-1998 study showing wide distribution of drifter tracks. Certain zones are far less likely to receive drifters, and therefore oil, than others (below).

MMS study with USF Scientists, OCS Study: MMS 2001-103

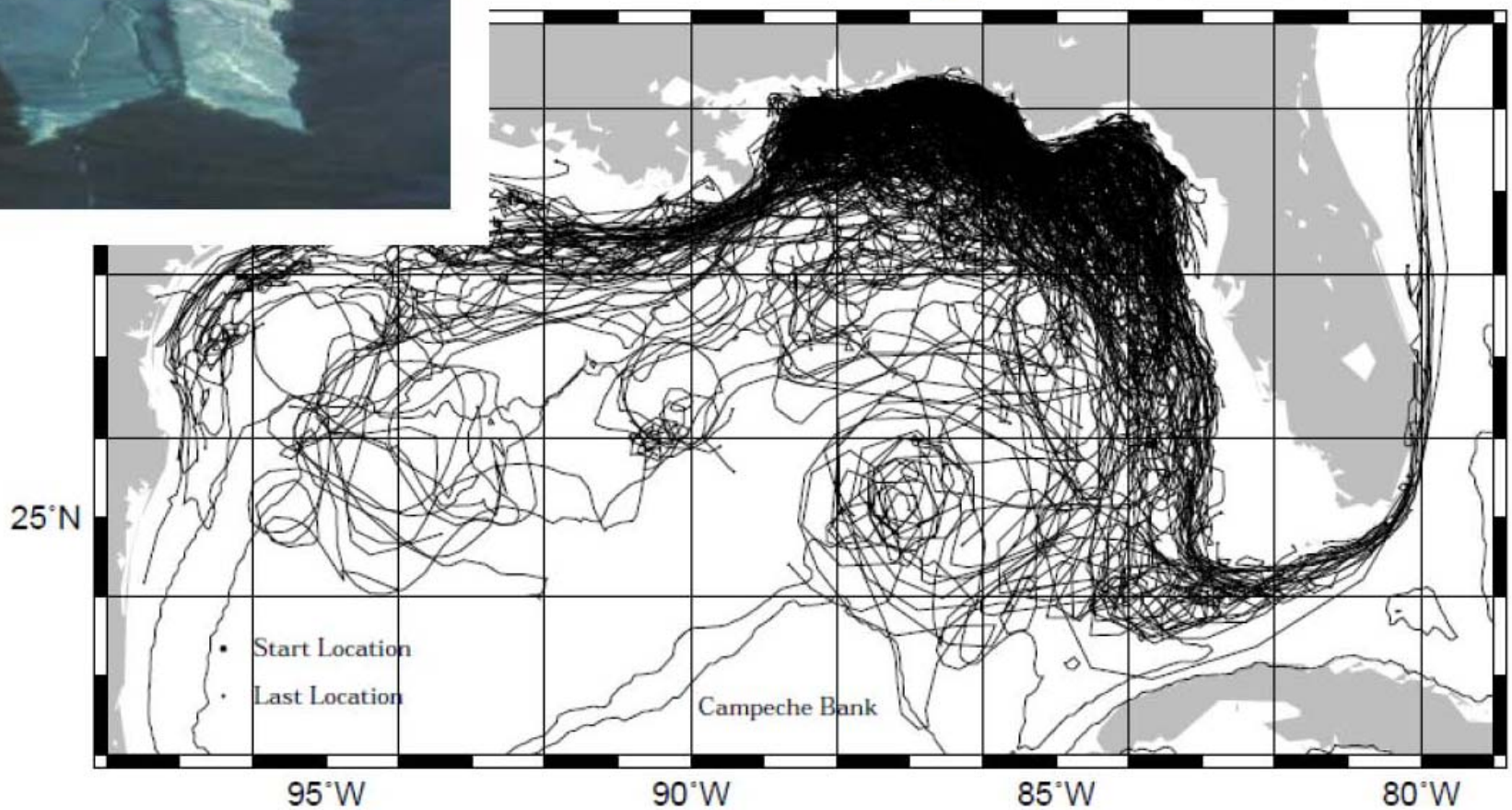


Figure 3. Tracks for each of the 342 drifters deployed during the SCULP-II experiment. Starting (ending) locations are shown with circles (diamonds). Bathymetry contours are shown at 200 and 2000 m.