

Invisible Oil Plume Detected in Gulf Waters

May 27 2010, By Vickie Chachere

(PhysOrg.com) -- Researchers aboard the University of South Florida's R/V Weatherbird II conducting experiments in a previously unexplored region of the Deepwater Horizon oil spill have discovered what initial tests show to be a wide area with elevated levels of dissolved hydrocarbons throughout the water column, possibly indicating that a limb of an undersea oil plume has spread northeast toward the continental shelf.

The Weatherbird II deployed a variety of instruments to detect the signature of hydrocarbons, which will be verified conclusively as Deepwater Horizon oil with more sophisticated lab tests ashore. The probable concentration of dissolved hydrocarbons was highest at 400 meters, indicating the suspected plume is at its highest concentration in the deeper waters. The discovery is significant because it verifies the presence of dissolved hydrocarbons in the deep recesses of the [Gulf of Mexico](#) that cannot be seen with the human eye but could eventually become a threat to marine life and habitats nonetheless.

The findings will undergo confirmation testing when the R/V Weatherbird II returns to its homeport of St. Petersburg at approximately 8 a.m. on Friday.

The R/V Weatherbird II made its discovery on Tuesday afternoon while performing tests along a series of stations east and northeast of the collapsed Deepwater Horizon rig. The researchers returned to the area on Wednesday and performed a precise repeat of their experiments which produced the same results.

The researchers' preliminary findings came from water sampling using three separate technologies: a CDOM Fluorometer, the ship's sonar and gliders which are able to assess [water conditions](#) as they move through the [water column](#).

“Our concern regarding these contaminants is they have the potential to be incorporated in the [food web](#),” said David Hollander, a chemical oceanographer who is a lead investigator in the research mission.

“The first [ecological impact](#) of this spill is the effect on coastal habitats, including marshes, beaches and estuaries. The second threat to nature would be the impact on the food webs. That is what's at risk.”

The R/V Weatherbird II's journey in the gulf did have some bright findings for the state of Florida. Several stations where water testing was completed between the Loop Current and the Florida coast showed currently clean water, no weathered oil on the surface and no record of dissolved hydrocarbons at depth.

The researchers were investigating the area northeast of the leaking well after models created by USF's Ocean Circulation Group Director Robert H. Weisberg indicated that oil plume from the spill might have spread underwater in that direction.

The underwater discovery of dissolved hydrocarbons came in area that is 35 kilometers northeast of the ruptured wellhead and in an area roughly south of Mobile, Alabama.

Scientists will need to conduct further tests to determine whether the suspected dissolved hydrocarbons were caused by dispersants or the emulsification of the oil as it moved through the [water](#) away from the leaking well.

The R/V Weatherbird II departed May 22 for the spill zone on a six-day mission. Seven scientists from USF and the Florida Fish and Wildlife Conservation Commission's research institute and six crew members are on board.

Provided by University of South Florida

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