

Subscribe
\$15 National Geographic Magazine




Inspiring people to care about the planet since 1888 | [Learn More »](#)

[Sign In](#) [SUBSCRIPTIONS](#)

[HOME](#) [PHOTOGRAPHY](#) [ANIMALS](#) [ENVIRONMENT](#) [TRAVEL](#) [ADVENTURE](#) [NATGEOTV](#) [KIDS](#) [VIDEO](#)

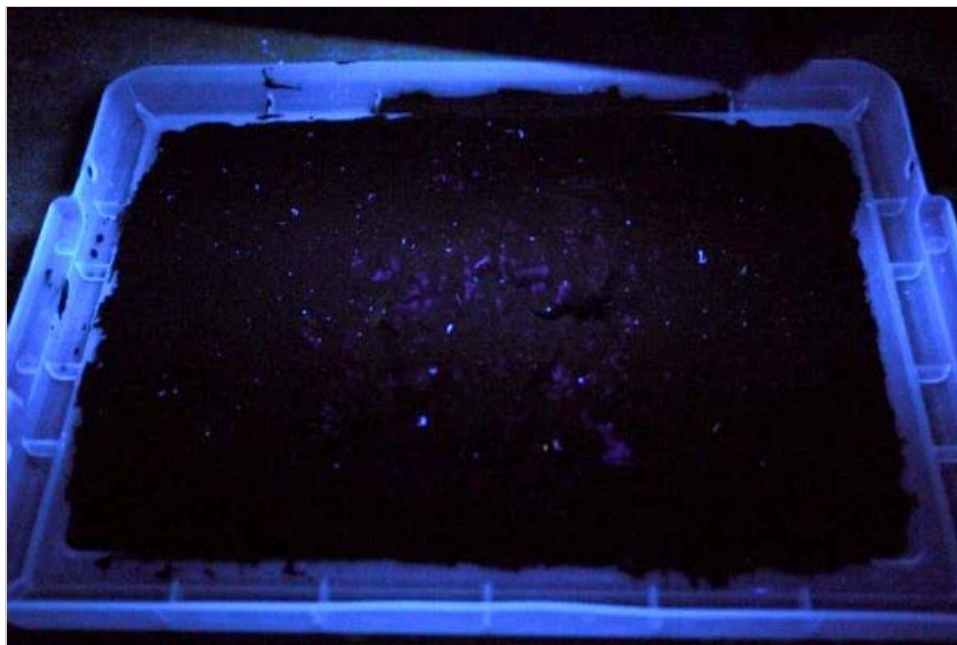
[Daily News](#) | [The Magazine](#) | [Maps](#) | [Science](#) | [Education](#) | [Games](#) | [Music](#) | [Blogs](#) | [Movies](#) | [In the Field](#) | [Mobile](#) | [Site Index](#)

NATIONAL GEOGRAPHIC Daily News

[Home](#) [Animals](#) [Ancient World](#) [Energy](#) [Environment](#) [Cultures](#) [Space/Tech](#) [Weird](#) [News Photos](#) [News Video](#) [News Blogs](#)

Toxic Oil Found Deep on Gulf Seafloor?

Oil may be harming base of food web, early results suggest.



Sediment samples taken during an August research cruise in the Gulf glow under UV light.

Photograph courtesy USF

Share

[Comments \(1\)](#)

[Facebook](#)

[Twitter](#)

[Google Buzz](#)

[Digg](#)

Christine Dell'Amore
 National Geographic News
 Published August 18, 2010

Weeks after the U.S. government claimed that the "vast majority" of oil from the [Gulf of Mexico spill](#) has been taken care of, oil has possibly been found deep on the Gulf seafloor, scientists announced this week.

(Related: "[Much Gulf Oil Remains, Deeply Hidden and Under Beaches.](#)")

What's more, tiny deep-sea creatures are showing a "strong toxic response" to

Most Popular News



Dreams Make You Smarter?
 Even during naps, REM sleep—when dreams are most vivid—boosts memory, creativity, and more, experts announced

Friday.



Space Photos This Week
 Plankton swirl, stars cluster, a meteor streaks, and Earth shines in our selection of the week's best space pictures.



A Fuel That Doesn't Go to Waste
 In the ultimate "closed loop" energy project, a garbage truck fleet near San Francisco runs on the gas produced by decomposing

trash.

ADVERTISEMENT

News Blogs

 [StumbleUpon](#)

 [Send to a Friend](#)

[More »](#)

News Video



[5 Years After Katrina, Ruins—And a Natural Wonder—Remain](#)



[Spill Still Threatens Migrating Birds](#)



[Video: Mammal-like Croc Found](#)

[See All News Video »](#)

hydrocarbons, an ingredient of oil, according to preliminary results released Tuesday by the [University of South Florida \(USF\)](#).

During a ten-day research cruise in August, the USF team sampled water and sediments in DeSoto Canyon—a nutrient-rich gully east of the *Deepwater Horizon* wellhead that's also the birthplace of many commercial fish species.

By shining ultraviolet light on the samples, the team indirectly detected hydrocarbons in the sample that seem to have the same fluorescent fingerprints as oil from the wellhead, which was capped July 15. (Related [pictures](#): "[Glowing Oil Could Aid Gulf Spill Cleanup](#).")

The early results are reminders that the oil hasn't been fully dispersed or degraded away, said cruise member [David Hollander](#), a USF chemical oceanographer.

"Don't let your finger off the pulse of this," he said. But Hollander emphasized that his team's observations are preliminary: "I hope they don't get misconstrued as scientific fact."

[Robert Carney](#), a biological oceanographer at Louisiana State University (LSU) in Baton Rouge, also cautioned that "we have to be exceptionally careful" about interpreting the results.

"We cannot base conclusions on short cruises with small groups of people—it has to be a [major] scientific undertaking," Carney said.

Gulf Seabed "Glow" Caused by Oil?

To collect their seabed samples, the USF team used a box corer, a geological tool for scooping up sediments that's "as primitive as it gets," Hollander said.

The samples not only emitted the telling fluorescence, but their glow persisted even after the samples had been frozen for seven hours, suggesting that living things weren't causing the light, Hollander said.

But there could still be other substances responsible for the brightness, such as fluorescent minerals. Further laboratory tests—expected early next week—will confirm whether the samples contain Gulf oil, he said.

It's "certainly plausible" there's oil from the damaged wellhead in the deep sediment and water, added LSU's Carney.

But he added that oil also occurs naturally in the Gulf. Hydrocarbons, for instance, often escape from natural oil seeps on the seabed. (Read more about [the Gulf of Mexico's natural seeps](#).)

Oil Means Lights Out for Tiny Creatures

The USF team also tested how bacteria and phytoplankton—microscopic marine plants—were responding to potentially oil-contaminated water from both the Gulf's surface and the deep ocean.

"There's been a lot of attention toward upper tropic levels—the sharks, the birds, the turtles," Hollander said. "We're asking what's going on at the base of the food web. To our surprise these things haven't come out either through [government] agencies or the scientific press—and indeed it appears there is a response."

Healthy bacteria and phytoplankton give off a gentle glow of visible light. So the team took otherwise fit organisms and exposed them to water samples from the surface and from the deep sea to see if that diminished their glow.

Phytoplankton showed an "enormous reduction" in light when they were exposed to deep-sea samples, but the plants seemed unaffected in the surface samples, Hollander said. The results were the opposite for bacteria.

The researchers aren't yet sure why the two types of organisms reacted differently. It's possible, for example, that different species have different reactions to the toxic effects of oil and chemical dispersants, Hollander said.

For the first time during an oil-spill response, [officials used chemical dispersants to break up oil at ocean depths](#) between 4,000 and 5,000 feet (1,200 and 1,500 meters).



"Jarhead" Bear Rescued

After ten days, biologists caught up to and freed a bear cub who'd gotten its head stuck in a plastic jar from the trash.



Sudan Beyond Darfur

Discover the issues straining hearts and minds in Sudan's north-south border area of Abyei.



"Sex c" Planet Discovered

Traditional naming conventions give a newly discovered exoplanet an alluring appellation.

digg™ [About Digg](#)

Popular stories from National Geographic News

- 236 [Toxic Oil Found Deep on Gulf Seafloor?](#)
- 400 [Dreams Make You Smarter, More Creative, Studies Suggest](#)
- 288 [Fires Can Create "Volcanic" Thunderclouds](#)
- 250 [Why Antarctic Sea Ice Is Growing in a Warmer World](#)
- 230 [Meteor Shower Photos Past & Present](#)

Powered by Digg's Users

Gulf Oil Spill News and Pictures



Oil Found on Gulf Seabed?

A signature glow detected in seafloor samples may be from *Deepwater Horizon* oil—and sea life may be suffering, preliminary results suggest.



Spill Still Threatens Migrating Birds

Despite the BP Gulf spill cap, millions of migrating birds this fall, and for years to come, may face oil threats—starvation in particular. [Video](#).

[More Gulf Oil Spill Coverage »](#)

National Geographic Magazine



Valley of the Whales

The origins of the marine mammal lie buried in Egyptian sand.



A Grassland Kingdom

India's Kaziranga park shelters tigers, buffalo, and rhinos.

[Get More From the Latest Issue »](#)

SPECIAL AD SECTION

Win a Grizzly Encounter
A trip for two to Montana—Join

One theory is that, in general, phytoplankton are more sensitive to dispersants—which may be more plentiful in the deep sea—while bacteria (not the oil-eating variety) react poorly to the purer oil still on the water's surface.

Hollander and colleagues next plan to test how larval fish and tiny animals called zooplankton respond to the samples.

Deep Gulf Oil "Not Good News"

For Texas Tech University ecotoxicologist [Ron Kendall](#), the bacteria and plankton's responses confirm his initial fears.

"This is what we've been worried about, because this is the base of the food chain," he said. "Any effects on that level can work their way right on up." (See [pictures of ten animals at risk from the Gulf oil spill.](#))

Kendall added that the potential discovery of oil on the seafloor "goes directly to the issue of the unprecedented use of dispersants."

Instead of rising to the surface, the bits of dispersant-treated oil may be suspended in deep water or may have settled on the seafloor, Kendall said.

In the highly sensitive deep Gulf, such dispersants can easily throw the environment off-balance, he said.

"This is what some of these results are starting to show—and that's not good news."

Comments (1)

[kalee619](#)

August 19, 2010, 10:15 a.m. ET

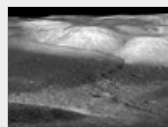
[REPORT ABUSE](#)

..And what about the people of the gulf living in this toxic matter? I guess money and greed triumphs all.

You must be logged in to post a comment

[Sign in here](#)

Latest News



The Moon Has Shrunk



"Terror Bird" Used Its Head to Punch



5 Years After Katrina, Ruins—And a Natural Wonder—Remain



Titanic Is Falling Apart

More From National Geographic



Sponsored Links

[BP](#)

Info about the Gulf of Mexico Spill Learn More about How BP is Helping.

www.BP.com/GulfOfMexicoResponse

[Oil Spill Preparation](#)

Emergency Response Kits & Planning Fire Boom, Skimmers, Best Products

www.appliedfabric.com

[CSA Environmental](#)

Marine Environmental Services - GIS Mapping - Surveys - Assessments

www.csaintl.com



Ads by Google

Sponsored Links

[Water Pressure](#)

[Life in Color: Purple](#)

[Photo of the Day:
Best of May 2009](#)

[Maya Rise and Fall](#)

[Lost Tribes of the
Green Sahara](#)

[Wind Power](#)

[Mountain Gorilla](#)

 [National Geographic Home](#) » [News](#) » [Toxic Oil Lurking Deep on Gulf Seafloor?](#)

[HOME](#)

[PHOTOGRAPHY](#)

[ANIMALS](#)

[ENVIRONMENT](#)

[TRAVEL](#)

[ADVENTURE](#)

[NATGEOTV](#)

[KIDS](#)

[VIDEO](#)

[SHOP](#)

[Daily News](#) | [The Magazine](#) | [Maps](#) | [Science & Space](#) | [Education](#) | [Games](#) | [Music](#) | [Blogs](#) | [Movies](#) | [In the Field](#) | [Mobile](#) | [Site Index](#)

[Subscriptions](#) | [Buy Prints](#) | [Stock Footage](#) | [Stock Photos](#) | [Travel With Us](#) | [Newsletters](#) | [Jobs](#) | [Global Sites](#) | [About](#) | [Contact](#)

[Donate](#) | [Press Room](#) | [Customer Service](#) | [Advertise With Us](#) | [Terms of Service](#) | [Privacy Policy](#)



© 1996-2010 National Geographic Society. All rights reserved.