

Science piecing together puzzle of BP Gulf spill

5 YEARS LATER, THE EFFECTS ARE STILL LARGELY UNKNOWN

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By Karen Nelson The (Biloxi, Miss.) Sun Herald

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BILOXI, Miss. Vernon Asper is a scientist who works in the deep waters of the Gulf of Mexico, looking for oil. It's still out there, five years after the nation's worst oil spill – the Deepwater Horizon blowout in April 2010 that killed 11 rig workers and spewed what was estimated at the time to be 205 million gallons into the Gulf over three months.

How much is there and where it is are legitimate questions, but five years out, answers still aren't there. It may have to be enough to know scientists are still looking and that some of it is accounted for – burned, skimmed, oxidized and eaten by bacteria. But it is in the deep waters. And learning how oil connects with sediment there is hugely important to finding where the oil is.

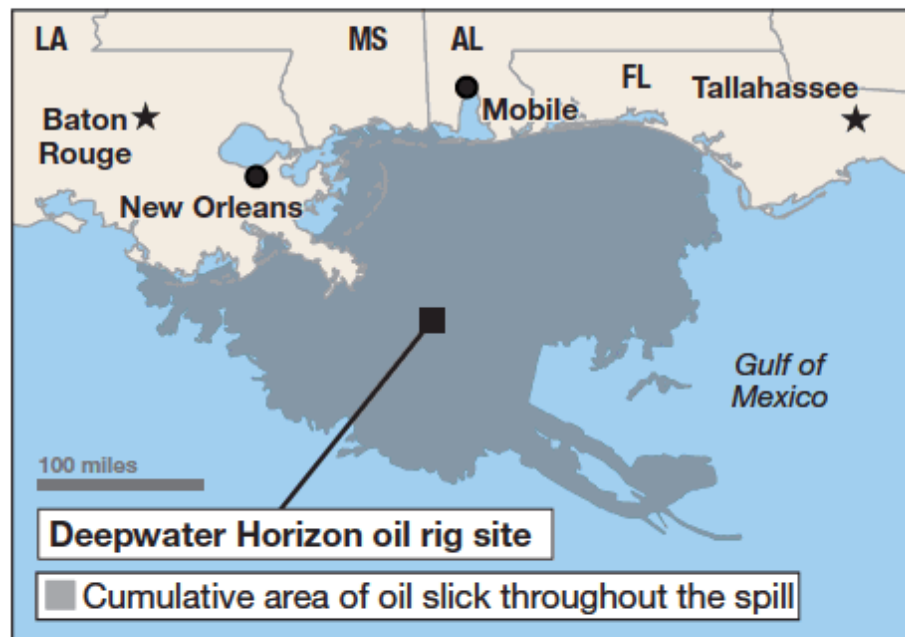
One theory is it collected and moved through a canyon on the Gulf floor like a series of underwater mountain streams, or stuck

to the Continental shelf. About 10 million gallons was found to have settled on the Gulf floor around the rig.

Asper, a professor of marine sciences for the University of Southern Mississippi, studies mud and the clouds of material in the water called marine snow. He was with a team that discovered a giant plume of oil and gas suspended in the water column two weeks after the blowout.

The Deepwater Horizon spill

Monday is the fifth anniversary of the explosion at BP's Deepwater Horizon oil drilling rig, the beginning of an oil leak that officially ended Sept. 19, 2010, when the oil well was sealed.



Sources: National Oceanic and Atmospheric Administration, Tribune reporting

Graphic: Tribune News Service



Today, meters with hollow glass floats, some moored a mile below the surface, measure the flow of water to see if currents pick up oiled material on the sea floor, lift it back into the water and move it to other places.

Asper and a team received an early grant that allowed them, within months, to place monitors in the deep, near BP's blown Ma-condo well, and they've been monitoring ever since.

Science works methodically, said Jessica Kastler, a geologist and education-program coordinator with USM's Gulf Coast Research Lab. "It's time-intensive."

There's a disconnect right now between what science can provide and what people expect from scientists, she said. People want answers, she said. "But sometimes the answer is, 'I don't know.'"

The science of the spill and its impact on the northern Gulf – the residents, wildlife and economy – is a quiet drama playing out in the findings of a unprecedented amount of research in the Gulf. The picture is coming together like a puzzle with thousands of pieces. Many pieces are still missing or kept from the public.

Monty Graham, head of USM's Marine Science Department and the Research Lab, said money flowing in for research will make the Gulf of Mexico the most-studied body of water in the world. Emerging pieces of the picture show that oil and the chemical dispersants used to break it up is likely contributing to the largest and longest-lasting dolphin die-off on record in the Gulf of Mexico that included dozens still-born. Scientists found oil entered the food chain in the smallest of organisms of the Gulf near Mobile Bay shortly after the spill. Toxicology studies show a mix of oil and dispersants hurt animals more than oil alone. Sargassum mats – crucial beds of floating material that harbor

young marine animals – sink when exposed to oil and then dispersant. Crude oil interrupts the ability of fish heart cells to beat effectively. And early findings show oil spill cleanup workers reported increased coughing and wheezing and mental health symptoms, such as depression and anxiety, compared to nonworkers.

When the well blew, the National Science Foundation pushed money to universities in the form of rapid-response grants to get feet on the ground.

What comes will be a better understanding of how the Gulf's ecosystems work, Graham said. And unlike pure science, this body of work will encompass how people interact with their ecosystem, affect it and thrive or languish with it, he said.