

Researchers shed light on Deepwater Horizon Oil Spill

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Credit: Florida International University

It has been six years since the Deepwater Horizon Oil Spill dumped millions of barrels of oil into the Gulf of Mexico. Plants and animals were harmed and the places they call home destroyed. The money

brought in by fisheries and tourism was cut. A way of life was tarnished.

With the highly anticipated Deepwater Horizon movie starring Mark Wahlberg, Kurt Russell and Kate Hudson due for release later this week, attention to one of the world's worst [oil spills](#) is sure to be reignited.

But long before cameras started rolling on the disaster thriller, researchers at FIU's School of Environment, Arts and Society have been focused on uncovering the far-reaching environmental damage done to the Gulf of Mexico from the oil spill. Their goal is to inform future ecological assessment efforts to better monitor and understand changing conditions.

Marine scientist Kevin Boswell is one of 10 researchers from across the state selected by the Florida Institute of Oceanography to help fortify the health of the Gulf of Mexico. The fisheries ecologist is studying [coral reef fish](#) communities impacted by the oil spill. Coral reefs form some of the most diverse ecosystems on Earth, offering shoreline protection, commercial fisheries and recreational opportunities. Seemingly rugged and everlasting, reefs are fragile ecosystems under threat from pollution and climate change. Boswell's Fisheries Ecology and Acoustics Lab is using sonar and remotely operated vehicle technologies to provide baseline information on coral reef fish diversity and ecology.

"One of the things that hit us in the face when the oil spill occurred was the lack of knowledge on the Gulf of Mexico as an ecosystem on a broad scale," Boswell said. "This is an exciting opportunity to interface two technologies in a novel way that will allow us to fill data gaps."

From the hidden crannies deep inside [coral reefs](#) to the depths of the sea floor, marine sciences Ph.D. student Laura Timm is diving deep to examine what life is like for crustaceans after the oil spill. Conducting her research alongside Heather Bracken-Grissom, she is examining

different species of crustaceans, including shrimp, to determine how the event impacted genetic diversity, population connectivity and communication. Her hope is to develop a timeline of their recovery and genetic sequencing protocols for future research.

Timm, Bracken-Grissom and Boswell are part of the Gulf of Mexico Research Initiative's DEEPEND Consortium, an international research effort dedicated to understanding the Gulf of Mexico and the impacts of the oil spill on the Gulf. Their research will play a role in the initiative's efforts to ensure scientists, first responders and policy makers are better prepared to understand, respond to and mitigate damage from future spills.

Oftentimes, communities learn of the damage spilled oil does to marine environments. Oil forms slicks that are difficult to remove and contaminate miles of water. It can penetrate into the feathers of birds and fur of mammals. Animals can easily ingest it and be poisoned or may die. But society is now learning not all damage to the gulf was caused by the oil itself.

A [study](#) led by Gary Rand of the Southeast Environmental Research Center found crude oil and weathered oil alone did not cause significant adverse effects in moon jellyfish, a species commonly found there. But the crude oil, in the presence of the chemical dispersant Corexit 9500 used to break up slicks, caused changes in color of the jellyfish, irregularities in their bell shape, tissue degradation and even death. Even though the gulf is home to one of the most diverse populations of jellyfish, these free swimming animals are often overlooked in marine toxicity assessments. According to Rand, selecting a variety of animal and plant species native to an ecosystem for toxicity assessment is critical for understanding potential risks to it.

Cleanup from an oil spill is difficult and it may take weeks, months or

even years to fully recover. All too often, people are caught off guard by not only the tragedy itself, but also by all the unknowns these events create. FIU is leveraging its depth of expertise within its faculty to educate researchers and responders on oil spill assessment, mitigation and recovery. In the long-term, the hope is when disasters strike, scientists will be better prepared to advance recovery.

Provided by Florida International University

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