

Deepwater Horizon: Crude oil at the bottom of the food chain

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(Two great metaphors in that headline.) [National Geographic](#):

5,000 barrels of oil (210,000 gallons, or 794,937 liters) a day are thought to be bleeding from a damaged wellhead at the nearby site of the Deepwater Horizon rig disaster. All that oil is poisoning the less photogenic creatures—plankton, sand crabs, and fish larvae, among others—at [the base of the region's food web](#), Schweiger noted.

If the oil spill can't be contained, the Gulf of Mexico could have another "dead zone in the making," according to Sylvia Earle, a marine biologist and National Geographic explorer-in-residence. ...

Oil bubbling up from the Gulf of Mexico wellhead, which sits more than 5,000 feet (about 1,500 meters) below the water's surface, is coming from even deeper inside the Earth.

That means the oil is heavier and thicker than the crude spilled in past, tanker-based disasters, noted Ron Kendall, chair of the Department of Environmental Toxicology at Texas Tech University in Lubbock.

Infauna, or small organisms such as clams and tubeworms that live in ocean sediments, are vital food sources for shorebirds and other coastal animals.

After the 1979 Ixtoc oil spill in the Gulf of Mexico, the area's infauna were reduced by up to 90 percent, Tunnell said—a potential reason many bird species left the area in the wake of the nine-month-long spill.

However, there may be a bright side: Organisms at the bottom of the food chain reproduce more rapidly than bigger animals, Tunnell pointed out by email. After the Ixtoc spill, infauna returned to pre-spill levels within about a year.

Some scientists also worry about one of the joint federal-industry response team's methods for controlling the oil: dumping chemical dispersants into the Gulf of Mexico.

These chemicals merely break up the oil into smaller droplets, making it less likely to spread—but more likely to drift down and choke life on the seafloor.

"We're wiping out critical elements of the base of the food chain of the Gulf," Texas Tech's Kendall said. "This is an ecotoxicological experiment underway in one of the world's most productive and fragile ecosystems."

As oil droplets spread through the water column, the crude can be fatal to plankton, the tiny, open-ocean creatures that many larger animals depend on, according to marine biologist Earle.

Rescue workers can clean and treat oiled birds and other relatively large animals that come ashore. But "how do you deal with deoiling plankton?" Earle said.


In addition to feeding marine species, plankton suck up carbon dioxide, a vital job in a warming world and one that climate engineers are trying to emulate, Earle noted. (See pictures of seven emergency climate fixes.)

If exposed to oil, these Louisiana wetlands—which human development has already diminished by 40 percent—may wither away, leaving just the open ocean.

And that means the noisy shorebirds nesting just a few hundred feet behind him would have to find another place to go.

"When oil collides with wildlife," Schweiger said, "oil always wins."

Oils well that ends well...

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