

Studies on the Deep Horizon oil spill

Terry Hazen (Lawrence Berkeley National Laboratory, USA)

The biological effects and expected fate of the vast amount of oil in the Gulf of Mexico from the Deepwater Horizon blowout are unknown due to the extreme depth and magnitude of this event, but also the unprecedented quantity of oil dispersant released and injected directly at the wellhead (1,544 m). We found that the dispersed hydrocarbon plume stimulated deep-sea indigenous bacteria that are closely related to known petroleum-degraders. Hydrocarbon-degrading genes coincided with the concentration of various oil contaminants. Changes in hydrocarbon composition with distance from the source, environmental isolates, and microcosms demonstrate faster than expected hydrocarbon biodegradation rates even at 5°C. Intrinsic bioremediation of the oil plume in the deep-water column without substantial oxygen drawdown occurred after only 2-3 weeks of capping the Macondo well.