

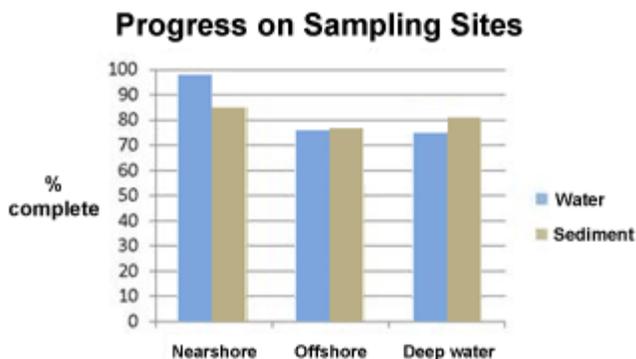
Subsurface Monitor

Sharing science
from the Gulf
oil spill
response

Issue 3 - October 15, 2010

Subsurface monitoring progress to date

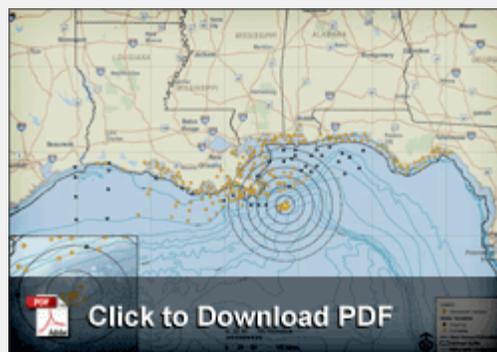
As of October 15, the subsurface monitoring program has completed water sampling at 226 of 254 sites (89%) and sediment sampling at 389 of 477 sites (82%). The program committed to conducting this sampling beginning on August 3 in response to a directive from Admiral Allen, then National Incident Commander. These numbers do not include samples collected earlier in the response. In total, over 31,000 samples have been collected to date. Processing, analysis, and review of the samples are an ongoing part of the coordinated effort to understand the spill's effects on the Gulf.



Samples are compared to EPA chronic benchmarks, chemical concentrations for water or sediment above which EPA estimates there is the possibility of harm or risk to [humans](#) or [other organisms](#) in the environment over long exposure periods. Benchmarks are designed to be a screening tool for identifying contaminants of concern when evaluating data. They do not represent measures of ecological injury, regulatory standards, cleanup levels, or remediation goals.

Updated information on sampling operations is available at <http://www.geoplatform.gov/gulfresponse>.

Water



All Completed and Ongoing Sampling Sites

Sediment



All Completed and Ongoing Sampling Sites

Spotlight on sediment core sampling

The subsurface monitoring program has collected hundreds of sediment cores. Each core provides a continuous, undisturbed sample of the seafloor (sediment) and the water immediately above it. This allows scientists to study not only the sediment and water, but the interface where they meet.

The multi-corers used in deepwater operations can weigh more than half a ton. A large ship with a powerful winch is required to carry the device to sampling locations and lower it overboard. When the multi-corer is brought to the surface, cores must be [processed](#) and then stored in refrigerators or freezers.

Large ships are capable of staying at sea for days or weeks, increasing the efficiency of sampling trips, but they also must carry large numbers of personnel and the means to support them. Sampling can be delayed by rough weather, which makes it difficult – and dangerous – to get the heavy multi-corer off the ship and back on.

Extensive advance planning is needed to determine sampling locations, particularly in a large operation such as the subsurface monitoring program. Travel time between sampling sites needs to be optimized. Ships may sample at sites that have not been sampled before, or they may be assigned to revisit earlier sampling sites to collect more data that will allow scientists to study changes over time. A broad range of input from federal and academic scientists has produced a thorough strategy for getting the core samples needed to support the best possible science.



Academic scientists, both onshore and at sea, are vital to the success of subsurface monitoring activities. The subsurface monitoring program is archiving and preserving cores for the independent use of academic scientists, in addition to sending cores to laboratories for analysis.

Core sampling is labor- and time-intensive, making sample collection and processing a major undertaking. By sharing cores with the broader scientific community, the subsurface monitoring program is maximizing the use of these scientifically important samples.



What comes next?

Led at the federal level by the [Department of the Interior \(DOI\)](#) and [NOAA](#), the Natural Resource Damage Assessment (NRDA) process seeks to assess the injuries to natural resources caused by the oil spill and response actions, and the lost use of services provided by those resources. The Damage Assessment helps determine the liability of the responsible party or parties and inform decisions about long-term restoration of the Gulf. A new, informative [video](#) on the Damage Assessment process is available on NOAA's [YouTube channel](#).

A Damage Assessment requires detailed and complex environmental analyses to evaluate the linkages among the released oil, the oil's environmental pathway, exposure to the oil, and ecological injury to resources, such as wildlife and habitats. NRDA scientists will ultimately evaluate the available data to develop an understanding of the types and magnitude of natural resource injury caused by the spill.

The Subsurface Monitoring Program has been working closely with the Damage Assessment teams throughout the summer, to coordinate and optimize efforts. NRDA samplers have been aboard a number of cruises to collect samples at relevant sites, ensuring they meet all the strict NRDA sampling and processing protocols.



For more information please see a new video describing the Natural Resource Damage Assessment process.

About the subsurface monitoring program

The subsurface monitoring program is a scientific collaboration among academic institutions, government agencies, BP, and other entities in response to the Deepwater Horizon oil spill. The program's goals are to assess the distribution, concentration, and degradation of oil remaining in the water column and/or bottom sediments; evaluate the distribution of dispersants used in oil spill response activities and their break-down products; and identify any additional response requirements that may be necessary to address remaining subsurface oil. The data collected by the subsurface monitoring program will form a valuable foundation for



long-term restoration efforts in the Gulf of Mexico.

Useful Links

- RestoreTheGulf.gov
- GeoPlatform.gov
- [NOAA Mission Log](#)
- [National Oceanographic Data Center \(NODC\)](#)
- [Seafood Safety](#)
- [NOAA Science Missions & Data](#)



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