

## NOAA's Oil Spill Response

# What to Expect in South Florida from the Deepwater Horizon/BP Oil Spill

### Has Oil from the Deepwater Horizon/BP Oil Spill Reached South Florida Yet?

There have been no confirmed observations of oil from the Deepwater Horizon near South Florida. Monitoring presently consists of daily overflights by trained observers to check for oil near the Loop Current, and vessels searching for tar balls approaching the Florida Keys.

If a significant amount of surface oil were to enter the Loop Current and begin to move toward the Florida Straits, responders would be able to see it, predict its movement, notify states and coastal communities, and help guide preparedness, response and cleanup efforts. As of June 22, oil from the Deepwater Horizon/BP spill has remained mainly in the north-central Gulf of Mexico, and has impacted shorelines in Louisiana, Mississippi, Alabama, and the Florida Panhandle.



### What Would the Oil be Like?

Because South Florida is about 600 miles from the Deepwater Horizon wellhead, any oil reaching South Florida will have

traveled hundreds of miles from the wellhead. During its

passage through the dynamic currents of the Gulf, the oil will have weathered and degraded.

For example, oil now floating in the north-central Gulf is a mixture of recently-released oil and oil that has been weathered for up to two months when the Gulf leak first began.

If oil were to reach South Florida, the freshest oil will have spent at least 10 days to 14 days on the water surface. It could arrive in Florida in the form of pancakes of brown oil, streamers of pudding-like emulsified oil, or very thin sheen. As oil on the water surface ages, winds and waves tear it into smaller and smaller pieces, and evaporation and dissolution of its lighter constituents makes it denser and more tar-like. Ultimately, floating oil becomes small tar-like balls, called tar balls.

If the oil reaches South Florida, **responders in South Florida may see a mixture of forms of oil, however, they are most likely to see tar balls.** The oceanographic processes that would transport oil also would broadly distribute it at sea, so it is not possible to predict just where the oil could go or when it could arrive. Depending on the age, these tar balls may be soft and gooey, denser and tar-like, or, if the oil has mixed with sand, easily crumbled.

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Responders also are likely to find tar balls predating this spill, which originate from other oil spills, vessel operations, natural oil seeps, or other causes. These older tar balls are likely to be denser and harder than tar balls from the Deepwater Horizon.

**It is unlikely that large, cohesive oil slicks will reach Florida waters. Instead, on the water surface, expect to see floating tar balls and/or scattered patches of weathered oil, perhaps mixed with *Sargassum* (algae) or other floating material.** Unless accompanied by sheen, these tar balls and oil patches may be hard to spot from the air. It's likely that shoreline impacts will be scattered and episodic. On shorelines, there might be small splatters of oil and/or bands of soft tar balls. Shoreline oil is most likely to accumulate in areas where marine debris and other floating materials naturally collect.

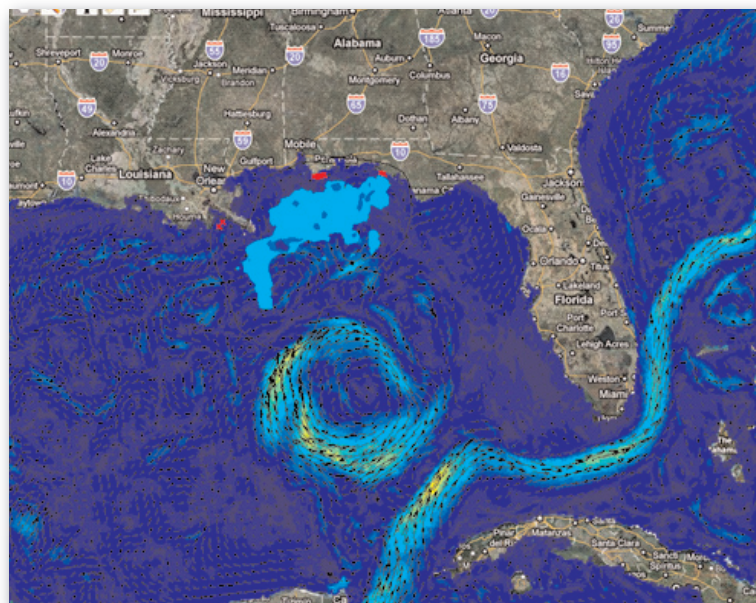


Protection and recovery strategies should be designed for this expected mixture of oil types. Because any oil reaching Florida waters will be widely scattered, detection and on-water recovery are expected to be difficult.

### What Could Move the Oil to South Florida?

Ocean currents in the Gulf of Mexico determine where the oil spilled from the Deepwater Horizon wellhead will go, and how quickly the oil will travel. The current that most influences whether the oil could reach South Florida is the Loop Current. This current flows west-to-east through the Gulf, first pushing up into the Gulf from the Caribbean Sea, then looping south and eastward to pass between the Florida Keys and Cuba (eventually merging with the Gulf Stream). It often spins off large eddies.

The Loop Current, along with other Gulf currents, may ultimately carry weathered oil products to South Florida shorelines, but several steps would need to occur.



*The Loop Current and an associated, clockwise-spinning eddy to the north as of June 22. The current trajectory for June 22 is also portrayed. Updated trajectories and current information is available at <http://www.geoplatform.gov/gulfresponse>.*

First, either the Loop Current would need to move farther north to come into contact with the oil, or the oil would need to move farther south to meet the Loop Current. At present, the main slick and the Loop Current are separated by more than 300 miles. Second, southerly winds would need to blow persistently in order to push the oil north to Florida's shorelines as the oil is swept by the Loop Current through the Florida Straits.

Presently, some oil has entered an eddy, which is about 60 miles from the main slick. This oil will remain within the eddy, circling and weathering in the open waters of the Gulf of Mexico. Eddies sometimes reattach to the Loop Current. If this happens, the oil within the eddy may enter the Loop Current and be transported eastward.

Learn more about NOAA's response to the BP oil spill at <http://response.restoration.noaa.gov/deepwaterhorizon>.

To learn more about NOAA, visit <http://www.noaa.gov>. 