



Deepwater Oil Spill - the Hurricane Season - and Open Thread 2

Posted by [Heading Out](#) on June 10, 2010 - 8:15am

Topic: [Environment/Sustainability](#)

Tags: [deepwater horizon](#), [hurricane damage](#), [oil spill](#) [[list all tags](#)]

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Five years ago, shortly after Kyle Saunders (Prof. Goose) invited me to help him start The Oil Drum, Hurricane Dennis, a Category 4 hurricane, struck the Gulf of Mexico. It formed on July 4th, 2005 and dissipated on July 13th. This was the first hurricane that The Oil Drum covered, and the focus, naturally, was on the impact which it would have on [oil production](#). This was significant, as the MMS reported.

Hurricane Dennis forced the evacuation of a total of 445 rigs and platforms, according to a Monday report from the U.S. Minerals Management Service, which was released a few minutes before the end of the regular trading session. The evacuations prompted the shut-in of 96.2% of daily oil production in the Gulf of Mexico, as well as 62.4% of daily natural-gas production, according to the MMS.

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In that first post, the path of the Hurricane was simplified to:



Which, you may note covered the Eastern part of the Gulf, with the black spot being the location for the Thunder Horse platform.



Thunder Horse after Hurricane Dennis

Hurricane Katrina, a Category 5, formed on August 23rd (It appeared on The Oil Drum [on the 24th](#), and daily thereafter) and dissipated on August 30th. Much of the damage that has been discussed related to the severe damage that the area around New Orleans, and all the way down the Delta, suffered. At the same time [the MMS reported](#)

These evacuations are equivalent to 78.75% of 819 manned platforms and 67.16% of 137

rigs currently operating in the Gulf of Mexico (GOM). Today's shut-in oil production is 1,427,969 BOPD. This shut-in oil production is equivalent to 95.20% of the daily oil production in the GOM, which is currently approximately 1.5 million BOPD.

Today's shut-in gas production is 8.798 BCFPD. This shut-in gas production is equivalent to 87.99% of the daily gas production in the GOM, which is currently approximately 10 BCFPD.

Hurricane Katrina not only knocked out rigs in the Gulf, it also had a severe impact on [refineries on shore](#).



Path of Katrina through the onshore refineries.

The price of gasoline rose rapidly and transiently [there were gas shortages](#). It was the first time The Oil Drum had problems with traffic [swamping the server](#). As for the [rigs in the Gulf](#)

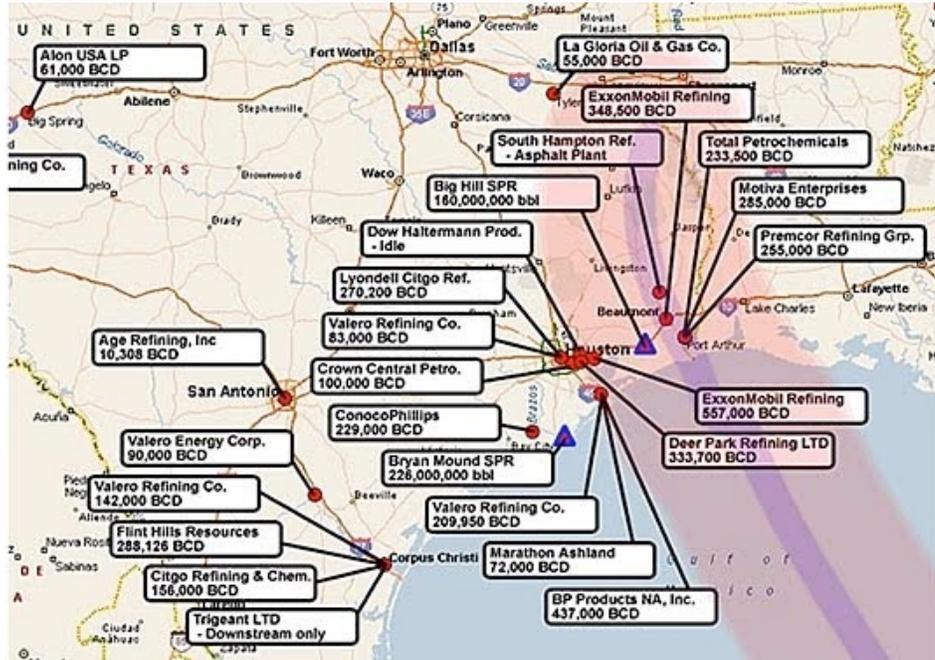
In terms of exploration, more than half of the 231 offshore rigs (excluding inland barges) currently working in the US Gulf of Mexico were in Katrina's path. A total of 48 rigs lay within the most adversely affected areas where winds were at hurricane force, blowing in excess of 74 MPH. Another 69 rigs were located in waters that experienced tropical storm force winds of 36 to 74 MPH. In total, 117 rigs, valued at a combined total of over \$7 billion, had to weather the storm.

As of Monday afternoon at 3pm, the US Coast Guard has reported that at least one, possibly two, deepwater rigs have lost their moorings and are floating freely in the Gulf.

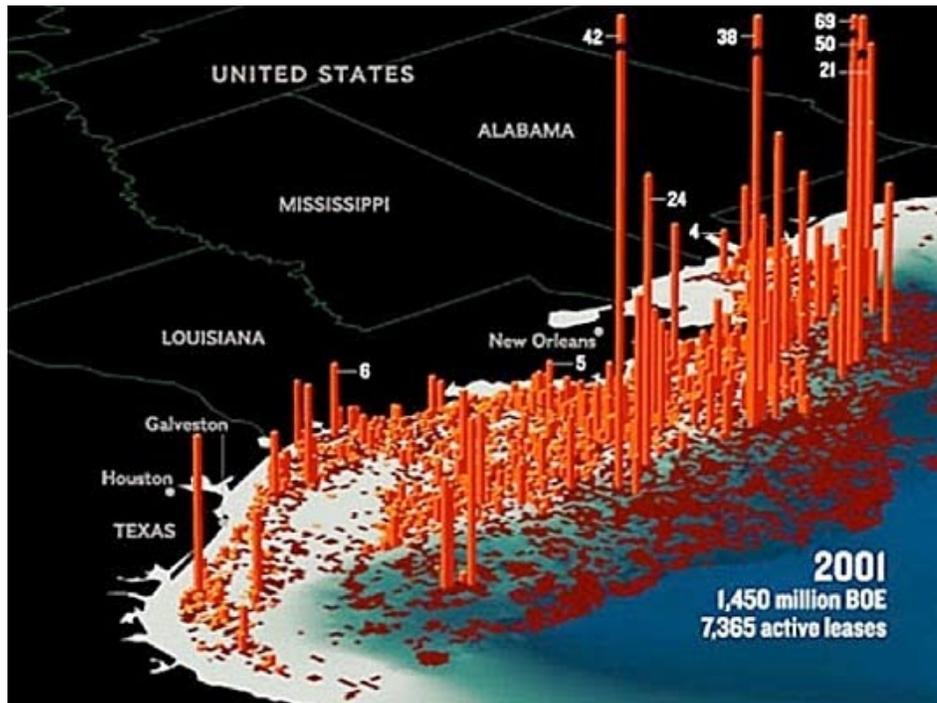
[58 rigs were damaged](#) or displaced of which 30 were lost. By Sept 2nd gas was, in places, at [\\$4 a gallon](#).

Hurricane Rita, a Category 5, was formed on September 17th and dissipated on September 24th, 2005. The rigs in the Gulf had not recovered from Katrina, but Rita swung further west moving through the offshore rigs to come ashore at the Texas border.

The effect of [Rita onshore](#) hit more refineries.



The impact of any hurricane in the Gulf on Gulf oil production and thereby on the national oil supply can be visualized with this map showing the locations of the rigs along the coast, from [back in 2001](#). It has not changed that much since, except that there are more rigs out in the Deepwater.



Rig density along the Gulf coast in 2001 (after [National Geographic](#))

Now I mention all this because the gas shortages, and loss of production from the Gulf lasted through most of the fall of 2005. In order to help with supply the National Petroleum Reserve was opened and [11 million barrels](#) of oil sold. It has since been replaced.

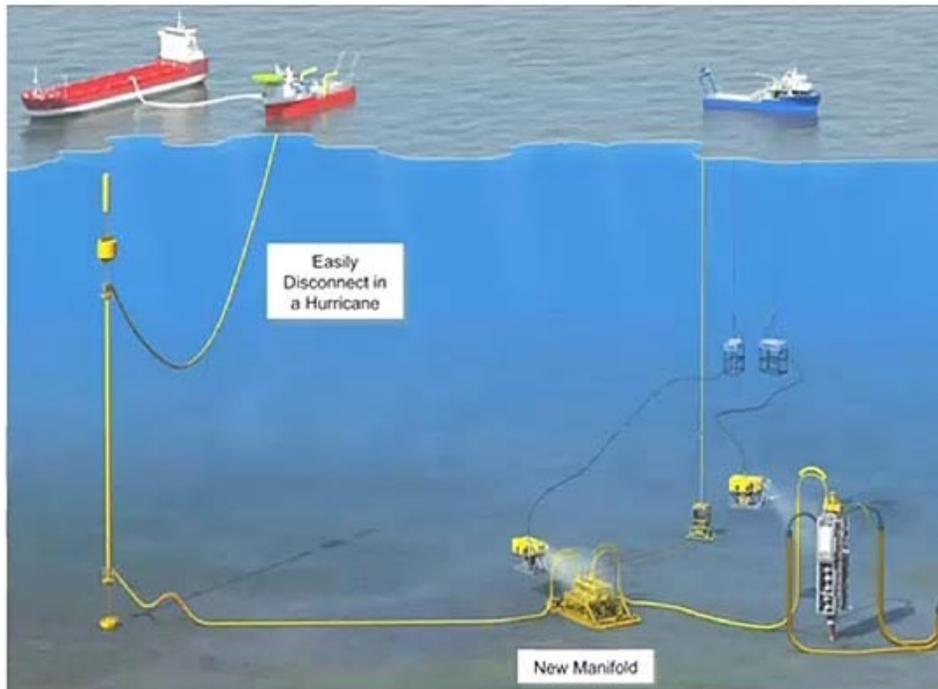
This year is already predicted to be a [more than usually severe](#) one for hurricanes, with 2 or 3 likely to make landfall in the United States. Which leaves me more than a little concerned, and

while there are many different concerns (I was on a survey team that went to NOLA after the disaster, and then down the Delta, and have no wish to ever see such devastation again), two are becoming more pronounced.

The first is as much political as anything, and it relates to the growing creation of the petroleum industry as villain du jour by the Administration and the main stream press. This is not meant in any way to excuse BP or whoever is ultimately found to have caused this disaster, (and I won't mention the different treatment of banking relative to the oil industry) but there are ongoing consequences both of current actions and attitudes and the potential increasing level of regulations and reviews that are being developed. They are all likely to negatively impact the resilience of the industry in bouncing back from hurricane damage, and in motivating, and even allowing, parts of that recovery to be as fast as it was last time. As a result, any significant hurricane in the Gulf this year may accelerate the return to \$4 gas, and for a longer time than the last.

And in that regard, I do remain worried that the powers that be shut down the Top Kill as fast as they did. Yes there were some problems, and I noted [some potential ones](#), but at least it might have ended with killing the well. That won't now be possible until the relief wells get there sometime in August. And in the meanwhile the well remains vulnerable to storms in the Gulf.

Not that BP have not been making provisions for emergency disconnection of the vessels catching the oil from the leak, and potentially for storing some of the oil. As Kent Wells [explained last week](#), "The current solution involves a new connection at the BOP, which won't be put in place to the end of June."



This will include a new collection tool that is currently being fabricated, made from 10-inch thick steel.



In addition there will be a new floating riser, with a flotation can to hold it some 300 ft below the surface, down below the level of the waves. Unfortunately if it has to be disconnected, then for the time that the Hurricane keeps rigs away, the well will be spilling oil.

The flow of oil leaking from the bottom of the cap continues to diminish, indicating that more oil is being captured.

For the first 12 hours on June 9th (midnight to noon), approximately 7,920 barrels of oil were collected and 15.7 million cubic feet of natural gas were flared. On June 8th, a total of approximately 15,000 barrels of oil were collected and 29.4 million cubic feet of natural gas were flared.

Given that the Enterprise can only handle 15,000 bd the change to a shuttle tanker and WTSV, this is [one of the reasons](#) why the ports remain open and that the system to draw off additional oil through the choke and kill lines is being accelerated.



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