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Hurricanes Ivan, Katrina, and Rita: Phenomenal Activity or Signs of Things to Come?

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Abstract

For most of the last three decades, the northern Gulf of Mexico has remained relatively free of large and powerful hurricanes. Basically, the tropical waters were relatively cool from 1970-1994. But in 1995, the pattern changed, and the Atlantic Basin heated up in more ways than one. Hurricanes have become more numerous and more powerful in recent years. A normal hurricane season would have 10 named storms, 6 of which would become hurricanes and two of those major hurricanes. There were 15 named storms in 2004, including 9 hurricanes and 6 major hurricanes. The 2005 season broke almost every record for activity with 27 named storms, 15 hurricanes, and 7 major hurricanes. The outlook for 2006 and beyond is not good. The recent pattern of significantly increased activity may well persist for decades. It's just a matter of time before another large and powerful hurricane impacts the northwest Gulf of Mexico.

Introduction

The 2004 hurricane season marked a significant upswing in major hurricane activity in the Gulf of Mexico. Massive Hurricane Ivan tracked across the central Gulf of Mexico in mid September. Ivan's winds of 135 to 150 mph generated some very large waves. Buoy 42040 located 64nm south of Dauphin Island, AL recorded significant waves as high as 50-60 feet, and maximum waves were estimated to be in the 80 to 90 foot range. These waves wrought havoc on platforms off the southeast Louisiana coast, however it wasn't so much the intensity of Ivan's core as much as the great expanse of hurricane-force winds which produced such large waves.

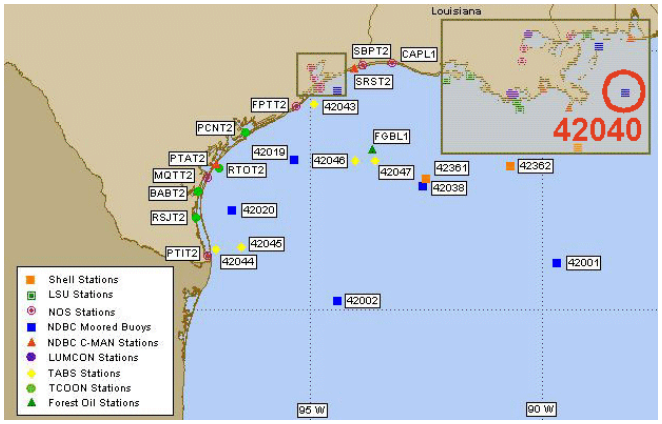

Figure 1: Buoy Locations in Northwest Gulf

As Ivan plowed through the drilling and production areas off the southeast Louisiana coast, its winds had dropped considerably, down to a Category 3 on the Saffir-Simpson scale. Theoretically, a Category 3 hurricane shouldn't have caused so much damage. Clearly, the Saffir-Simpson scale was not the best measurement of how potentially damaging a hurricane like Ivan might be because Ivan was no "normal" Category 3 hurricane – its hurricane-force winds extended 100 or more miles from its center. It had been many years since such a large hurricane had impacted the waters of the northern Gulf of Mexico.

Climatologically, hurricanes as large as Ivan are rare in the central and northern Gulf of Mexico, occurring perhaps once every few decades or longer. So it was generally thought to be unlikely that the 2005 hurricane season would be as active as far as the Gulf of Mexico was concerned. Such thoughts turned out to be quite wrong.

2005 Hurricane Season

By all measurements, the 2005 hurricane season was the most active in recorded history, which extends more than 150 years into the past. With a total of 27 named storms, including fifteen hurricanes, seven major hurricanes, and four category 5 hurricanes, the 2005 hurricane season will be long-remembered as the most destructive season on record, both offshore and inland across the northern Gulf of Mexico.