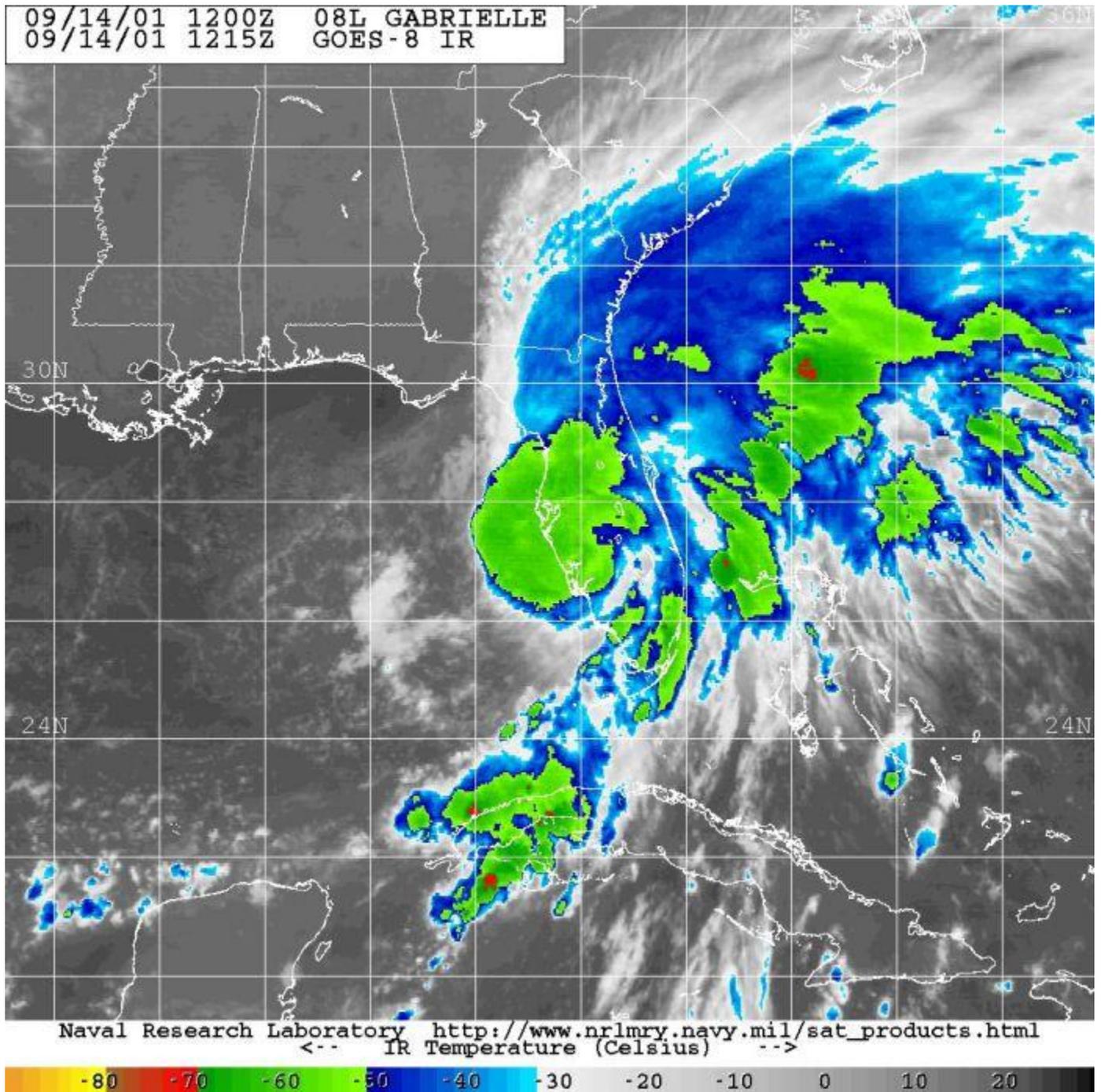
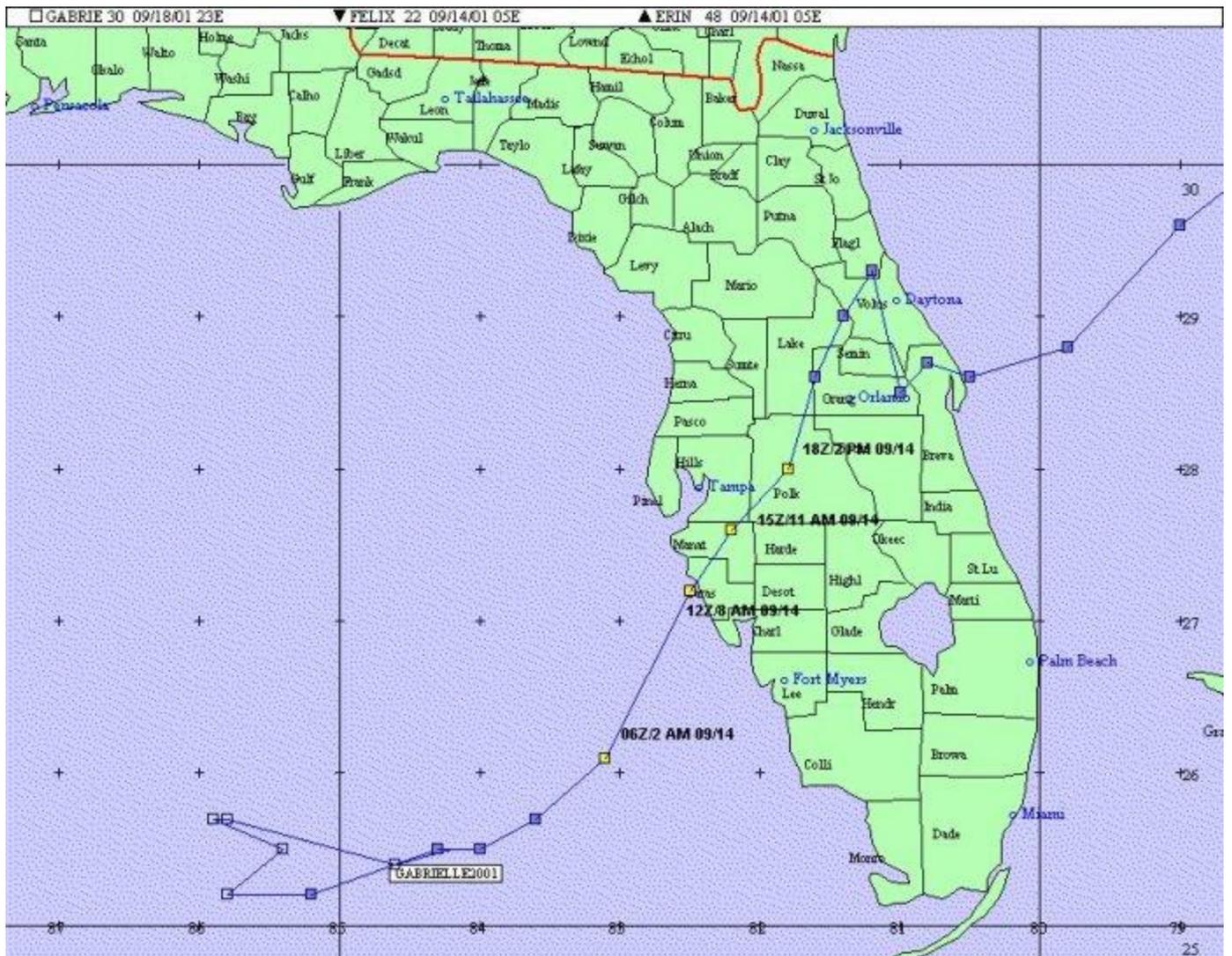


Tropical Storm Gabrielle

September 13 - 15, 2001





Overview

Tropical Storm Gabrielle formed during the afternoon of September 13th, after meandering as a tropical wave and depression in the eastern Gulf of Mexico. Initially a weak system, Gabrielle gathered strength quickly overnight on the 13th, with central pressure dropping to 992 mb. At the same time, the storm began moving toward the Southwest Florida coast. Early on the 14th, Gabrielle intensified further, and accelerated to the northeast. Just before landfall at Venice (Sarasota County), Gabrielle reached her peak intensity, with a minimum central pressure of 980 mb, along with a small core of sustained winds just below hurricane force.

Gabrielle made landfall in Venice, where minimum central pressure (983 mb) was reported at both the municipal airport and marine reporting station around 8 AM EDT. The storm quickly moved northeast, passing through interior west central Florida during the daylight hours of the 14th. Gabrielle moved just south of Orlando by late afternoon, then slowed considerably and jogged east overnight, reaching Cape Canaveral toward daybreak on the 15th. After a brief pause, the storm shifted northeast and gradually accelerated into the western Atlantic, eventually becoming a short lived hurricane.

The combination of wind and rain produced damage which, as of this writing, had exceeded \$15 million across our County Warning and Forecast Area. The values incorporated a rather even mix of wind damage, overland

flooding, and coastal flooding.

Storm Effects in West Central and Southwest Florida

1. Overland Flooding

Freshwater flooding of small streams, creeks, and poor drainage locations was noted across much of the area (Figure 1). Hardest hit were areas south and east of Tampa Bay, where antecedent rainfall during the prior week had already pushed many small streams and creeks toward bank full. Rainfall from Gabrielle alone totaled 4 to 8 inches, with some spots receiving over 10 inches (Figure 2). Locations in Hardee and Desoto counties had received nearly 20 inches of rain by the middle of September.



(a)



(b)



(c)

Figure 1. Freshwater flooding in the Tampa Bay region. Images (a) and (b) were taken in Manatee County; image (c) in Hillsborough County.

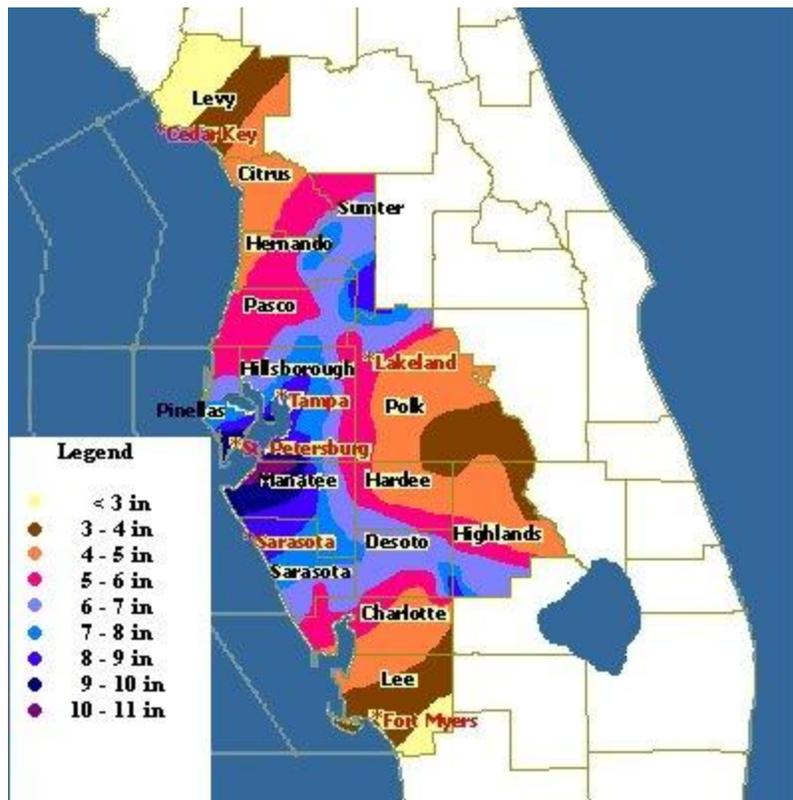


Figure 2. Rainfall totals from Gabrielle, beginning the afternoon of 9/13 through the early morning of 9/15.

River flooding was the most widespread since the El Nino spring of 1998.

2. Storm Surge Flooding

Storm surge flooding occurred immediately southeast of where Gabrielle made landfall. This included the coastline from near Englewood in Sarasota County to the Lee County barrier islands. Very high tides inundated the northern shoreline of Charlotte Harbor at the entrance to the Peace River. The measured tide of 6.2 (5.1 feet above normal), a level not seen since 1926, resulted from the combination of a surge of south winds up the harbor, and sheet flow from flooded areas southern Desoto County.

In Lee County, a surge of more than 3 feet punched across Fort Myers Beach, inundating the barrier island and placing many automobiles briefly under water.

Beach erosion was common across the southwest Florida coast where storm surge was greatest. However, minor erosion was also noted along north and east facing shorelines of Manatee, Hillsborough, and Pinellas County.

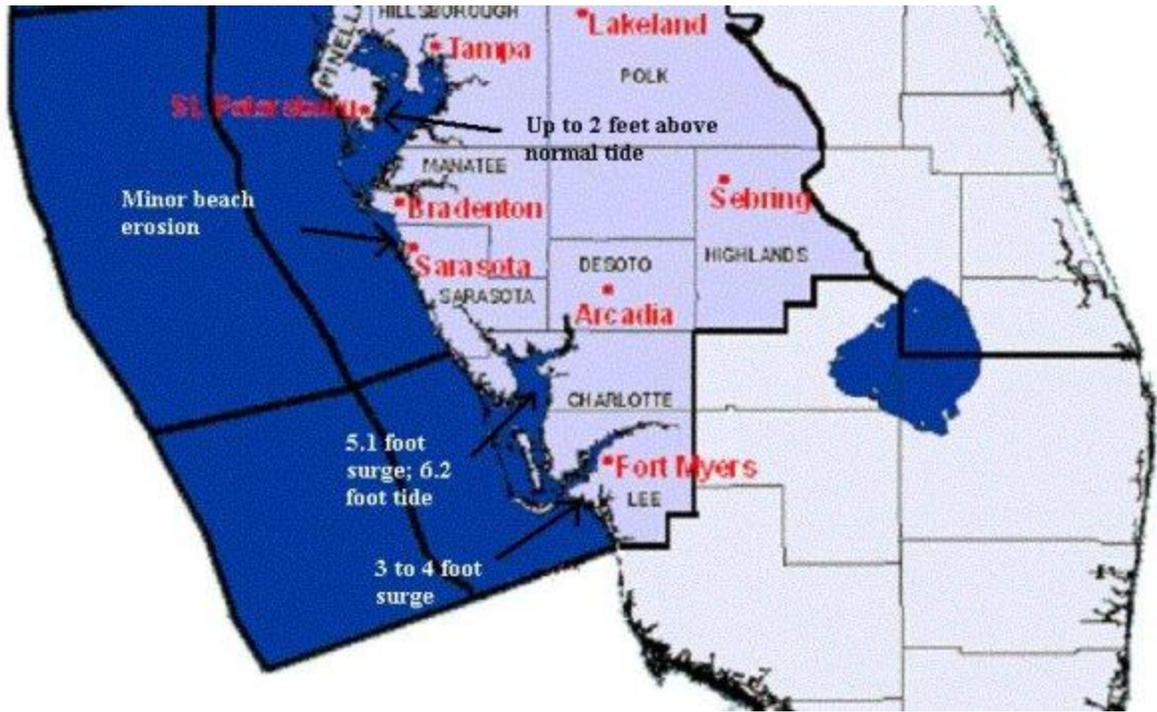
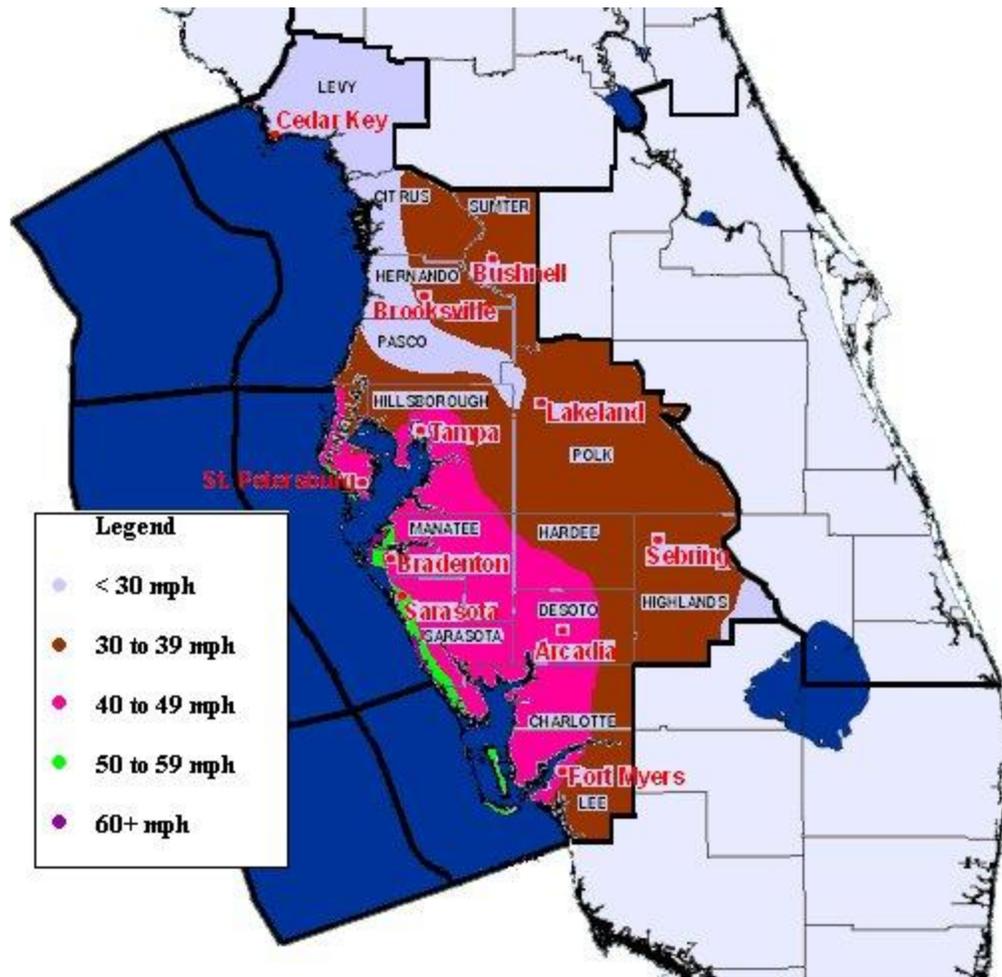


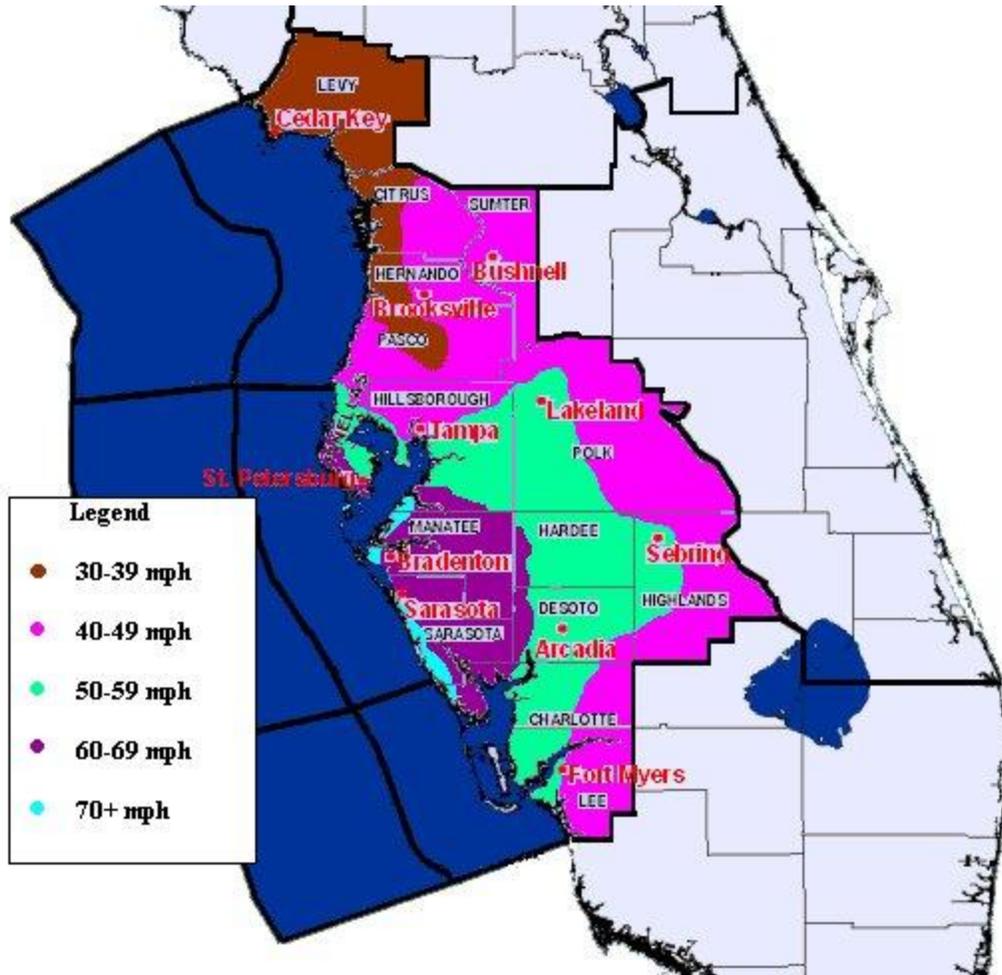
Figure 3. Locations of storm surge and beach erosion (black arrows for each).

3. Wind Damage

Sustained tropical storm force winds affected a fairly large portion of west central and southwest Florida, mainly along and south of a Tampa Bay to Lakeland line (Figure 4a). Tropical storm force gusts were felt almost everywhere in the county warning area (Figure 4b). The winds, in combination with rain-saturated soils and drought-weakened flora, caused thousands of trees to snap or become uprooted. Direct structural damage was generally minor (See pictures below). Four small tornadoes may have been spawned by Gabrielle, all occurring during the early morning hours of the 14th.



(a)



(b)
 Figure 4. Peak sustained winds (a) and peak wind gusts (b) during Gabrielle.

Pictures of damage as a result of Hurricane Gabrielle



Service station wind damage in Manatee County



Large Tree snapped in southern Hillsborough County

Apartment Roof damage in Manatee County



Insulation blown into home after roof damage in Manatee County