

Geospatial Technology and Hurricane Katrina

Many people remember the destructive power of Hurricane Katrina in 2005. It was recorded as being the largest hurricane to strike the United States in addition to causing billions of dollars of damage with 175 mile per hour winds and 20 foot storm surges. (11 Facts n.d.) However, what many people don't know, is that Hurricane Katrina was the first major hurricane to use the full power of Geospatial Technology available at the time. Katrina also pioneered the way for what would become some of the most groundbreaking technology in the geospatial revolution.

Hurricane Katrina began as a tropical depression in the southeastern Bahamas in late August. It quickly strengthened to become the 11th tropical storm of the 2005 hurricane season. (Hurricane Katrina n.d.) Just a few hours before making first landfall, Katrina strengthened to a Category 1 hurricane with 80 mile per hour winds at landfall. After tearing through Florida and maintaining hurricane status, it quickly re-strengthened while passing over the very warm waters of the Gulf of Mexico. (Hurricane Katrina n.d.)



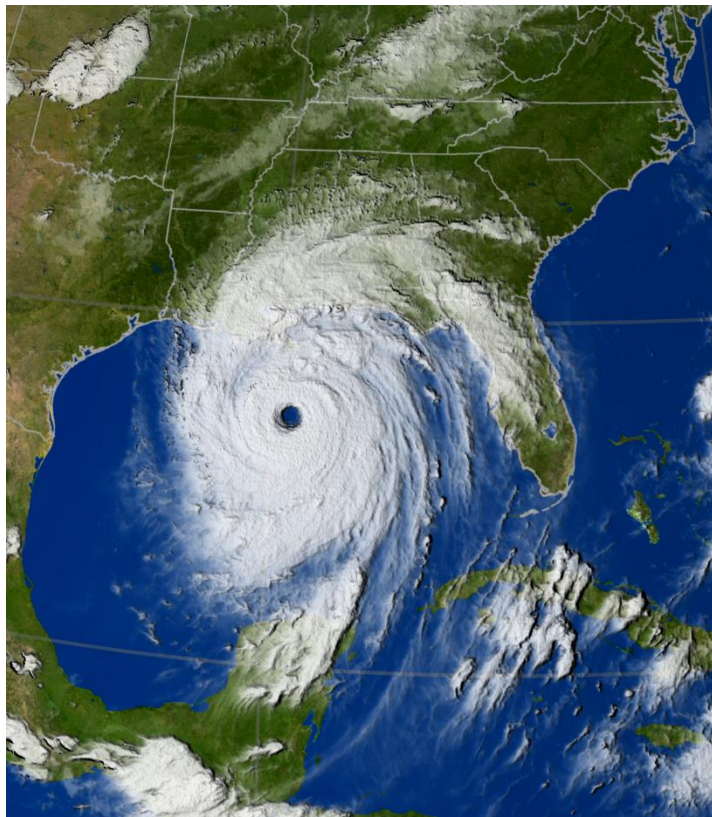
Tracking of Hurricane Katrina

<http://csc.noaa.gov/hurricanes/#app=6078&3e3d-selectedIndex=1>

Within 12 hours of rebuilding, Katrina was the first Category 5 hurricane in the Gulf in 25 years. As it neared the Louisiana and Mississippi coasts, it weakened to a Category 3 hurricane but still packed a huge punch with winds of Category 4 strength while the eye was still off of the coast.

(Meteorological) The picture above shows the path and strengthening of Hurricane Katrina
(NOAA)

There were many aspects of geospatial technology used throughout the duration of hurricane Katrina including, satellite imagery, use of GPS technology to track 911 calls and even use of special NOAA software to help aid survivors on the ground. Each of these aspects not only were essential to helping in Katrina, but all led to greater discoveries in the geospatial world.



Satellite Imaging of Hurricane Katrina

<http://archive.org/details/SVS-3251>

The most basic use of geospatial technology in Katrina was the use of satellite imagery and base maps to help track and predict the path of Katrina. The picture on the left from NOAA, shows the path Katrina took over a base map of the United States. This gives viewers a chance to visually place the storm while also giving them a concept of how big Katrina was in relationship to the United States.

Geospatial technology was mostly used in the aftermath of Katrina. Chelsea DeCapua from the Oak Ridge National Laboratory states,

“During Hurricane Katrina 70% of the police force in New Orleans were victims, leaving the city with limited law enforcement. Officers from other areas were called in who were not familiar with the city. Geospatial technology was used to create maps that included roads and major infrastructure locations to help guide first responders coming from different areas. Information on things such as water supplies, electricity outages and baseball fields to land helicopters was needed, and supplied to first responders by the use of geospatial technology.” (DeCapua 2007)

This was particularly important because like Capua said, many of the law enforcement coming in had little or no knowledge of the area they were protecting and assisting. NOAA and several other companies

and organizations helped by providing their services

to make this technology

even better. On Thursday

September 1st 2005, just 3

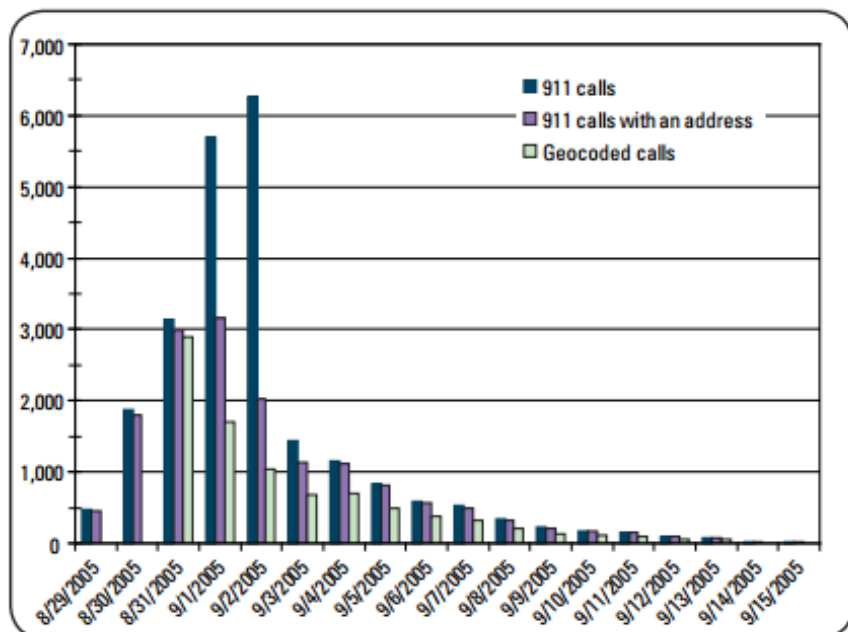
days after the landfall,

NOAA provided imagery to

Google Earth which in turn

helped first responders gain

a more accurate picture as



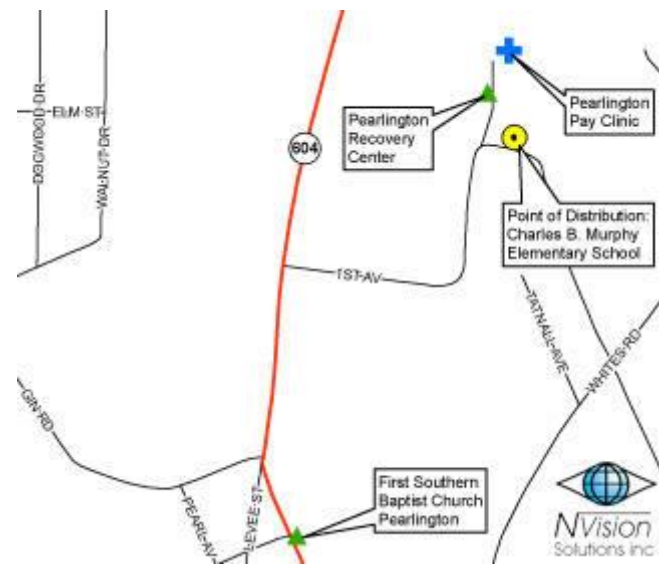
Track and Log of 911 Calls during Hurricane Katrina

Editorial: Geospatial Technology Offers Katrina Response
Much, Delivers Some

to the geographic location of places that people would refer to in distress calls that would not necessarily be street addresses (Editorial 2005). The chart above shows the number of calls that came in to 911 beginning with the day of the landfall in Louisiana. As you can see, many of the calls received did not have a specific address for rescuers to come to. However, due to the use of GIS technology, many calls could still be tracked to at least a general location if not to a specific location. This helped save lives because rescuers were able to find these people, even just knowing a general location.

Another prime example of the use of GIS was just outside of New Orleans in the suburbs of Hancock County. As an anecdote by Kelly Boyd and Jacqueline Mills states, “data sets were created and digitized in the GIS lab. Many facilities such as medical clinics, points of distribution and emergency housing sites were plotted from GPS coordinates.” (Boyd and Mills, 2007).

They were also able to add roads and other natural occurring features to help people not accustomed to the area to better orient themselves in the rural and remote area (Boyd and Mills, 2007). The map to the right is an example of one of the maps that was created of Hancock County to help aid in the relief of Katrina. In the map, you can clearly see the two green triangles representing the 2 recovery centers in the



GIS Map of Hancock County, Louisiana

<http://www.directionsmag.com/articles/gis-applications-during-response-to-hurricane-katrina-small-local-governmen/122896>

realm of this map. Also marked on this map are an elementary school, a pay clinic as well as several roads that would help relief workers to orient themselves.

Even though GIS technology has evolved significantly since Hurricane Katrina in 2005, most of its core beginnings were founded during that time. GPS, one of the most fundamental GIS technology in this day and age, was just beginning to be used by data centers to help aid in thing like recovery for Hurricane Katrina. If we have come this far in the 8 years since Katrina, imagine what can happen in 8 more.

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