

24 June 2011

## Mapping Tuscaloosa Tornado Damage with the Mesa Rugged Notepad™

On Wednesday, April 27, 2011, a colossal series of tornadoes ripped through several states in the South, killing hundreds of people and damaging thousands of homes, businesses, and properties in its wake.

One city hit particularly hard was Tuscaloosa, Alabama. In total, the city's death toll reached 43 people,<sup>1</sup> while over 600 people were injured.<sup>2</sup> The tornado "... cut a 5.9 mile path of destruction, damaging or destroying more than 5,700 structures, directly affecting ... 13,700 people who lived and worked there."<sup>3</sup>

As with any natural disaster aftermath, recovery is a long road requiring much assistance from the government, volunteers, humanitarian organizations, etc. Tom Patterson, Wildland Fire Specialist at Esri, visited Tuscaloosa as part of Esri's disaster response team, bringing recovery kits with him containing rugged handhelds, GIS software, maps, laptops, and other equipment to work with the Urban Search and Rescue (USAR) and damage assessment teams. Among this equipment were 15 Mesa Geo 3G Rugged Notepads, provided by Juniper Systems.

The Mesa Rugged Notepads, running ArcGIS Mobile by Esri, were used to map, assess, and note the level of damage done to houses and structures in the area, indicating if it was damaged, destroyed, or in good condition. With assistance from cadaver dogs, the Mesas also mapped the location where survivors and the deceased were found.



Mesa Geo 3G running ArcGIS Mobile software to map GPS coordinates of structures damaged by the Tuscaloosa tornado.



### Mesa Geo 3G Features:

- 5.7 inch active viewing display
- Wi-Fi, Bluetooth®, & 3G modem
- 2–5m accuracy GPS receiver
- Digital camera
- IP67 rating
- Windows® Mobile 6.5.3 OS
- Dual batteries = 16 hour runtime

<sup>1</sup> Jason Morton, "Death toll from Tuscaloosa tornado rises by two," TuscaloosaNews.com, June 1, 2011, <http://www.tuscaloosaneews.com/article/20110601/NEWS/%20110609998/1007?Title=Death-toll-from-Tuscaloosa-tornado-rises-by-two> (accessed June 9, 2011).

<sup>2</sup> Greg Bluestein and Holbrook Mohr, "Tornadoes devastate South, killing at least 281," Associated Press, April 28, 2011, [http://news.yahoo.com/s/ap/20110428/ap\\_on\\_re\\_us/us\\_severe\\_weather](http://news.yahoo.com/s/ap/20110428/ap_on_re_us/us_severe_weather) (accessed June 21, 2011).

<sup>3</sup> Jason Hanna, "Tuscaloosa mayor: Eyes back on tornado catastrophe," CNN, May 6, 2011, <http://www.cnn.com/2011/US/05/05/alabama.tornadoes.mayor/index.html> (accessed June 9, 2011).

# Customer Story



24 June 2011

The ArcGIS Mobile software running on the Mesas was synchronized to an ArcGIS server, which enabled real-time updates to be sent to the Situational Awareness Internet Map Viewer. This allowed the Emergency Operations Centers to prioritize needs based on the information collected by the Mesas. In the past, people would leave the command center and use their own individual data collection method, usually pen and paper. This resulted in data that could not be quickly standardized, leading to loss of important information. Now with the use of rugged handhelds and GIS software, the identification and recovery planning process is greatly improved and all information is accounted for.

Tom Patterson continued using the Mesa Rugged Notepad to map tornado damage in Missouri, as well as flood damage in Kentucky. He plans on using it throughout the rest of the year to map wildfires, floods, oil spills, earthquakes, locust plagues, and other areas where mobile GIS is needed in the field. Tom said, "I have used just about every PDA known to mankind, searching for the ultimate mobile mapping device for the last 10 years. I am convinced it is the Mesa. . . . It is so much fun handing it to someone, stand[ing] back and watch[ing] the WOW factor kick in."

Juniper Systems appreciates the opportunity to serve those affected by the catastrophic tornadoes in Tuscaloosa, Alabama and wishes its citizens a quick and effective path to recovery.



Firefighters from Tuscaloosa Fire and Rescue Service and USAR use the Mesa for navigation to areas to search for missing and unaccounted for individuals.



This geotagged photo, taken by the Mesa, captures the destruction faced by citizens of Tuscaloosa.