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Team pooled resources to make maps

SDSU center had help from volunteers, experts

By Bruce V. Bigelow
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As fires raged out of control in San Diego County last month, experts working at campus computer centers and volunteers from halfway across the globe got permission to dip into a “technological bucket” of information.

They pulled out aerial images of the ever-changing fire scenes and merged them with emergency information to create maps showing fire perimeters, road closures, evacuations and local assistance centers. The maps were used on TV broadcasts and news Web sites.

“This group of people just spontaneously stood up to collect this imagery,” said Paul Hardwick of San Diego State University, who coordinated the information provided to the county's Emergency Operations Center.

The maps were created using information from police and fire helicopters, NASA satellites, unmanned military spy planes, and National Guard, Air Force and Navy surveillance aircraft.

The unprecedented effort was focused at SDSU's Visualization Center, which has emerged in recent years as a clearinghouse for online images and information about natural disasters.

Online volunteers from as far as Taiwan and Australia offered their expertise in remote sensing, visualization, spatial statistics and Global Positioning Systems.

“The Internet and the ability of people to get information made a huge difference,” said Eric Frost, co-director of the Visualization Center. “People had the ability to see what was going on and to get out of there. It made the evacuations easier.”

The team's goal was to show the wildfires and their effects in vivid detail, said SDSU associate professor Ming-Hsiang Tsou.

What was striking, Tsou said, was the software's ability to “geo-reference” images so they could be aligned precisely with map coordinates and landmarks.


HOWARD LIPIN / Union-Tribune

Eric Frost, co-director of the Visualization Center at San Diego State University, said wildfire data maps gave people “the ability to see what was going on and to get out of there. It made the evacuations easier.”

Sophisticated mapping software, which once cost thousands of dollars, is now broadly available from Google, Yahoo and Microsoft.

A handful of Google employees drove to San Diego to help in the effort, which was supported by dozens of “Googlers” at the company’s headquarters in Mountain View, said Megan Quinn, a company spokeswoman.

“There have been several other instances of My Maps being used for publishing news on natural disasters and current events, but never before on this scale or magnitude,” Quinn said.

Frost said he also had help from Larry Smarr, a renowned Internet expert at the University of California San Diego. Smarr persuaded officials at NASA’s Goddard Space Flight Center in Maryland to share satellite images, including infrared thermal images of hot spots.


“NASA Goddard threw all their assets at this,” Frost said. “It normally takes them 24 hours to process images. But they were doing it for us in three hours, so it was almost tactical.”

Smarr also arranged to provide SDSU’s fire maps through ultrafast Internet connections at UCSD.

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