

MapRelief

Experts provide high-tech mapping software to help with tsunami recovery.

Sending money to help southeast Asia's tsunami-stricken region wasn't enough for a Georgia Tech Research Institute scientist and his colleague. They decided to send themselves — paying with their own funds — to lend their high-tech mapping expertise to recovery and rebuilding efforts.

Their volunteer mission began in early January 2005 with providing advanced geographic information system (GIS) mapping capability to aid agencies and other officials working in the region, which was devastated by a Dec. 26, 2004 tsunami that killed more than 169,000 people. GIS combines layers of information, such as terrain and vegetation data, for comprehensive analysis of a particular area.

"We decided we should go sooner rather than later," says Nick Faust, a semi-retired principal research scientist at the Georgia Tech Research Institute (GTRI). ".... We saw the news reports, the accounts of all the deaths — one-third of them children. We wanted to do something, and we had the contacts and the expertise."

Faust and Tim Foresman, president of the non-profit International Center for Remote Sensing Education (ICRSE), of which Faust is vice-president, installed advanced image processing and GIS software for their colleagues at the Asian Institute of Technology (AIT) in Bangkok, Thailand. Their mission

was part of ICRSE's "MapRelief" effort to provide quick mapping capabilities to places in need.

"When we got there, we found what we expected," Faust says. "A lot of the aid agencies were having to send people out in the field with no maps.... The U.N. has GIS mapping capabilities on a global scale, but what they needed were maps on a local scale because the tsunami damage only extended from the coast to a few miles inland."

Commercial satellite imagery companies provided the needed imagery, but AIT researchers needed advanced technology to incorporate it into a GIS system. So Faust installed the ERDAS Imagine software, which was donated to the cause by Leica-Geosystems, a Swiss company.

"GIS maps will be able to help with cleanup and rebuilding as officials try to determine higher areas where people can build," Faust explains. Accurate mapping, along with a tsunami warning network similar to those in Japan and the central Pacific, will help save lives in case of another tsunami, he adds.

With the software upgrade, AIT will be able to use its conference facilities to host training sessions in GIS and global positioning system technology for AIT graduates — many of whom work for aid agencies throughout southeast Asia — and others.

In the coming months, Faust and Foresman — under the auspices of ICRSE — hope to obtain government or private foundation grants to fund additional collaboration with AIT to assist in relocation plans for tsunami victims and develop a long-term regional planning response to the disaster. The researchers hope to recruit some of their GIS colleagues around the world as volunteers in the effort and to coordinate their participation with other professional volunteer groups.

@ Read more at: gtresearchnews.gatech.edu/reshor/rh-w05/tsunami-map.html

contacts

Nick Faust at
404-894-0021 or
nick.faust@gtri.gatech.edu

Tim Foresman at
410-796-1980 or
foresman@direcway.com



ABOVE: Before-and-after satellite images show the devastation (note increase in greenish area in bottom image) from the tsunami along the Thai coast in Phuket.

LEFT: Georgia Tech researcher Nick Faust observes damage on the Thai peninsula in early January.

BACKGROUND: A satellite image of Khao Lak, Thailand, reveals coastal damage (brownish areas) caused by the tsunami, while higher elevations (areas of green vegetation) were left untouched.



IMAGE COURTESY INTERNATIONAL CENTER FOR REMOTE SENSING EDUCATION

BY JANE M. SANDERS