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NASA Gives UNM Satellite Surveying Tool

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Researchers at the University of New Mexico have a powerful new tool that lets them view vast areas of North America almost instantly, using live satellite data.

The \$3.4 million NASA program will allow scientists to observe the ravages of floods and fires as they happen, or even tell ranchers where grass is growing in abundance, UNM professor Louis Scuderi said.

"We can potentially let ranchers know, this is where you want to put your cows," he said Wednesday. Scuderi directs the Center for Rapid Environmental Assessment and Terrain Evaluation, or CREATE.

In late June, UNM installed two satellite dishes that let researchers download data from satellites that make at least 20 sweeps each day over North America.

The system also features a powerful computer that lets them process the data within minutes.

One morning about two weeks ago, Scuderi saw an example of the system's power when a message popped up on his computer screen.

"It alerted us to the fact that there was a potential fire in the Gila," he said. Another two hours passed before news appeared on the U.S. Forest Service's Web site of a fire in New Mexico's Gila National Forest.

Researchers previously had to wait up to a month to obtain such data from NASA.

"It's not very useful to know what was happening three weeks ago," Scuderi said. "If it's a forest fire, we want to know what is happening now."

The technology is expected to help medical researchers at UNM who need timely environmental data to predict outbreaks of infectious diseases such as Hantavirus and plague.

It should also help identify fire-prone areas by providing data about the moisture content of trees and grasslands.

Among the first uses for CREATE is a project to track dying piñon trees in New Mexico and other ailing vegetation throughout the West. The same conditions may be killing sagebrush in Arizona and creosote bush in California.

Daily observations across vast areas could help determine why the plants are dying, said Richard Watson, associate director of CREATE.

"I think we're seeing something that is unprecedented, at least in the historical record," Scuderi said.

Watson said satellites use dozens of electromagnetic frequencies to probe the Earth's surface, allowing scientists to track subtle ecological changes.