Engineers Find New 'Lake,' Prompting Emergency Floodwater Release from Falcon Dam

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(PhysOrg.com) -- The Center for Space Research at The University of Texas at Austin has discovered that a 200-square-mile lake has formed in the Rio Grande Basin of northern Mexico, threatening residents of Starr County and others in the Rio Grande Valley.

Gordon Wells, a research engineer with the center, has been closely monitoring the engineering research center's satellite imagery to anticipate regional flooding. On July 9 he discovered the new "lake," about the same size as the Rio Grande River mainstream reservoir and fishing paradise, Falcon International Reservoir.

Wells, the science and technology adviser for the Texas Division of Emergency Management, immediately notified the International Boundary and Water Commission, the binational agency charged with flood control along the Rio Grande.

The commission has since changed plans for floodwater release.

"We're looking for missing water," Wells says. "The question of how much rainfall occurred in Mexico following Hurricane Alex and Tropical Depression 2 has been a constant concern, because the reservoirs cannot be operated correctly if unknown flows exist in the system. The dams make emergency releases to compensate, but thousands of people are impacted even in a 'controlled' event."

As a result of the continuing influx of stormwater, evacuations are occurring in communities in Starr County and surrounding areas. Preparations are underway for possible larger-scale evacuations as the runoff triggers escalation of emergency water releases from the reservoirs and downstream communities are affected.

The new reservoir formed when the Río Salado overflowed its banks between the Venustiano Carranza Dam in Nuevo Leon and Falcon Dam on the U.S.-Mexico border. As a result, Mexican Highways 85 and 2 became impassable. The Salado River feeds Falcon Reservoir and the new, two-week-old "lake" now draining down the Rio Salado grew to about the same size as Falcon Lake.

"The lake formed from an unusual 'choked flow' condition," Wells says, "and its floodwaters are now entering Falcon Reservoir, raising the flood pool into the critical level above the all-time record set in 1958."

Wells uses the satellite images to create models that forecast flood-affected areas.

"The current modeling predicts the reservoir flood pool will peak at 2.5 feet above the all-time record," he says.

A suite of services developed and supported by staff at the Texas Advanced Computing Center allows Wells and his team to manage, view and share terabytes of data. A custom Web configuration allows the team to immediately provide access to critical data, such as images of the new "lake," anywhere in the world, instantaneously.

Residents in the Rio Grande Basin have been advised to continue to monitor National Weather Service warnings and forecasts for updated information and river forecasts concerning flood conditions.

Provided by News from The University of Texas at Austin