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Remote Sensing; New Findings from University of Texas Austin in the Area of Remote Sensing Described (Multi-Sensor Approach to Improve Bathymetric Lidar Mapping of Semi-Arid Groundwater-Dependent Streams: Devils River, Texas)

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2020 AUG 17 (VerticalNews) -- By a News Reporter-Staff News Editor at Journal of Engineering -- Current study results on remote sensing have been published. According to news reporting out of the University of Texas Austin by VerticalNews editors, research stated, "Remote sensing technology enables detecting, acquiring, and recording certain information about objects and locations from distances relative to their geographic locations. Airborne Lidar bathymetry (ALB) is an active, non-imaging, remote sensing technology for measuring the depths of shallow and relatively transparent water bodies using light beams from an airborne platform."

Funders for this research include Texas Parks and Wildlife Department.

The news editors obtained a quote from the research from University of Texas Austin: "In this study, we acquired Lidar datasets using near-infrared and visible (green) wavelength with the Leica Airborne Hydrography AB Chiroptera-I system over the Devils River basin of southwestern Texas. Devils River is a highly groundwater-dependent stream that flows 150 km from source springs to Lake Amistad on the lower Rio Grande. To improve spatially distributed stream bathymetry in aquatic habitats of species of state and federal conservation interest, we conducted supplementary water-depth observations using other remote sensing technologies integrated with the airborne Lidar datasets. Ground penetrating radar (GPR) mapped the river bottom where vegetation impeded other active sensors in attaining depth measurements. We confirmed the accuracy of bathymetric Lidar datasets with a differential global positioning system (GPS) and compared the findings to sonar and GPR measurements. The study revealed that seamless bathymetric and geomorphic mapping of karst environments in complex settings (e.g., aquatic vegetation, entrained air bubbles, riparian zone obstructions) require the integration of a variety of terrestrial and remotely operated survey methods."

According to the news editors, the research concluded: "We apply this approach to Devils River of Texas. However, the methods are applicable to similar streams globally."

For more information on this research see: Multi-Sensor Approach to Improve Bathymetric Lidar Mapping of Semi-Arid Groundwater-Dependent Streams: Devils River, Texas. Remote Sensing, 2020,12(2491):2491. (Remote Sensing - http://www.mdpi.com/journal/remotesensing/). The publisher for Remote Sensing is MDPI AG.

A free version of this journal article is available at https://doi.org/10.3390/rs12152491.

Our news journalists report that additional information may be obtained by contacting Kutalmis Saylam, Near Surface Observatory, **Bureau of Economic Geology**, John A. and Katherine G. Jackson School of Geosciences, University of Texas Austin, Austin, TX 78758, USA. Additional authors for this research include Aaron R. Averett, Lucie Costard, Brad D. Wolaver, Sarah Robertson.

Keywords for this news article include: University of Texas Austin, Technology, Remote Sensing.

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