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Hydrographic survey methods for determining reservoir volume

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Abstract

Since the creation of the Texas Water Development Board (TWDB) hydrographic survey program in 1991, over 100 bathymetric surveys of Texas reservoirs have been conducted. From these surveys, reservoir volumes and surface areas for corresponding reservoir stages can be estimated, thus providing engineers, managers, and regulators with accurate knowledge of water availability. Volume differences derived from multiple surveys of individual reservoirs also provide estimates of capacity loss over time due to sedimentation. Completing each survey requires extensive field data collection and precise data analysis, which often limit the frequency with which surveys may be conducted. This paper serves to document the innovative survey methods used by the TWDB hydrographic survey group, including a presentation of the in-house HydroEdit software, which increases survey accuracy while drastically reducing the time required for data processing.



Keywords

Hydrographic surveying; Reservoir volume; Data editing; Bathymetry; Sedimentation

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