Introduction

Lago Loíza is a reservoir located at the confluence of Río Grande and Río Grande de Ojudia in the municipality of Trujillo Alto, western Puerto Rico, about 7 km west of Mayagüez, about 5 km north of Guánica, and about 3 km south of Río Grande (fig. 1). The Caguas Dam was dams and by the Puerto Rico Aqueduct and Sewer Authority (PRASA), and was constructed in 1931 as a water supply reservoir for the San Juan Metropolitan Area. The dam is approximately 18 meters (m) high and was built using a gravity dam that dams both the Rio Grande and Río Grande de Ojudia. The dam has an estimated capacity of about 15 million cubic meters (Mm³) of water that is used to supply water to the city of Mayagüez and its surrounding areas. The dam was constructed using concrete and has a spillway that allows water to flow into the reservoir when the water level exceeds the capacity of the dam.

The 2009 survey was conducted to update the reservoir storage capacity and to assess the sedimentation rate within the reservoir. The survey was conducted using bathymetric mapping techniques, and the data were used to create a detailed map of the reservoir bottom. The map was used to determine the storage capacity of the reservoir and to evaluate the sedimentation rate within the reservoir. The survey was conducted using a combination of high-resolution sonar and GPS equipment, and the data were processed using specialized software.

Storage Capacity, Sedimentation Rate, and Useful Life

Bathymetric maps of the reservoir were created to determine the storage capacity of the reservoir, and the results were used to assess the sedimentation rate within the reservoir. The reservoir is used primarily for water supply, and the sedimentation rate is an important factor in determining the useful life of the reservoir. The reservoir is a key component of the water supply system for the city of Mayagüez and its surrounding areas, and the sedimentation rate is an important factor in determining the useful life of the reservoir. The survey was conducted to assess the sedimentation rate within the reservoir and to determine the useful life of the reservoir.

The survey was conducted using high-resolution sonar and GPS equipment, and the data were processed using specialized software. The data were used to create a detailed map of the reservoir bottom, and the results were used to assess the storage capacity and sedimentation rate within the reservoir.

During July 8–15, 2009, the U.S. Geological Survey (USGS) Caribbean Water Science Center (CWSC), in cooperation with PRASA, conducted a bathymetric survey of Lago Loíza. The survey was designed to update the reservoir storage capacity and to assess the sedimentation rate within the reservoir. The survey was conducted using high-resolution sonar and GPS equipment, and the data were processed using specialized software. The data were used to create a detailed map of the reservoir bottom, and the results were used to assess the storage capacity and sedimentation rate within the reservoir.

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