Sustainable Water Supply and Quality:
Sedimentation of Lakes and Reservoirs

Water Resource Assessment:

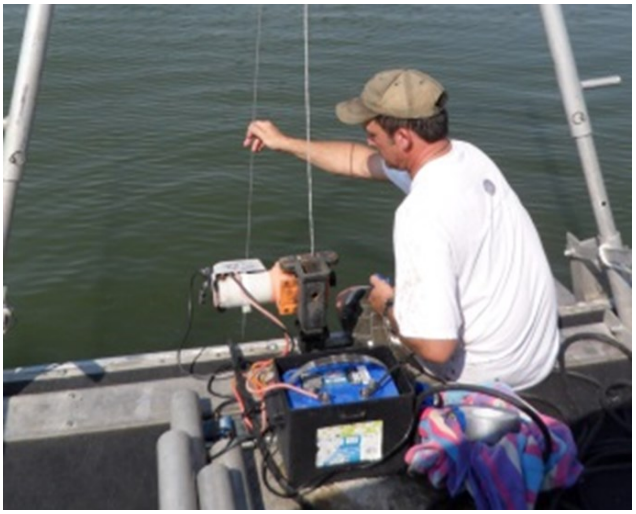
Land-use changes and urbanization expose upper layer soils to wind and water erosion delivering sediment to lakes and reservoirs. Sedimentation of water resources is a natural process, however not always beneficial. In order to effectively manage aquatic resources, it is critical to know the exact acreage, depths, and volume of a water resource through regular assessments. Measurements provide valuable information to:

- Calculate current storage capacities and projected longevity of water resources;
- Conduct volumetric analysis of sedimentation rates and deposition; and
- Determine long-term effectiveness of erosion-reducing conservation practices implemented.

Assessment Techniques

Bathymetric mapping combines several technologies including: differential global positioning system (DGPS), acoustic depth sounder, and geographic information system (GIS) software. The information can be used to calculate water availability and track sediment deposition.

Sub-bottom profiling and sediment surveys use low frequency acoustics to determine the depth of water from water surface to sediment layer. Core samples are used to verify remotely sensed sediment accumulation data and can be used to determine historical erosion rates.



Partners:

Texas State Soil and Water Board
River Authorities
Environmental Protection Agency
Water Control and Irrigation Districts
Private Land Owners
Department of Defense
Tribal Nations
Natural Resources Conservation Service
Agricultural Research Service

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