

# Water Science Laboratory

## Capabilities

The Texas A&M AgriLife / Blackland Research and Extension Center / Water Science Laboratory (WSL) was established to provide personnel, expertise, and equipment required for basic field and laboratory assessments of water-borne contaminants. The WSL supports scientists and technical staff who maintain a large inventory of field sensors, dataloggers and basic laboratory analytical equipment necessary to conduct investigations on many water-related issues. WSL basic capabilities include; stream flow determination, base and storm flow monitoring, dissolved constituent determination, suspended constituent determination, and watershed constituent exports. WSL cooperates with local, regional, national, and international laboratories to extend its analytical capabilities and operational footprint. Collected data is used to conduct basic research, make annual resource assessments, validate waterbody impairments, provide resource recommendations, and support modeling studies.

Balancing the benefits gained by developing water resources with negative effects of development upon water quality and quantity, through water-related assessment and planning programs, is the project's ultimate goal. Expanding new technologies and improving old ones, through basic and applied research, offers a scientifically sound and fiscally responsible way to accomplish this goal.

Laboratory qualification and quantification is accomplished using standard chemical analyses, ion chromatography, gravimetric analysis, and biotic culture methods. Large scale water resource assessment simulations are conducted using the Soil and Water Analysis Tool (SWAT), Agricultural Policy Extender (APEX), and other computer models.

The lab supports students with an interest in water-related research. Training new scientists for tomorrow's critical water issues is a major goal of the WSL.



Collecting water quality data in central Texas stream



Sediment monitoring stations at Fort Hood

The WSL maintains international relationships with researchers from Shimane University in Matsue, Japan. Past activities have included symposium invitations and cooperative research exchange programs. The lab has an on-going effort evaluating heavy metal distribution patterns in alluvial sediments present in Texas and Japanese rivers.

## Current Projects

The WSL uses water quality and quantity measurements as surrogates to determine land conditions, trends, and management effects on the Fort Hood Military Reservation. The lab provides field monitoring, laboratory analysis, and data interpretation required for the Fort Hood Sediment Monitoring Project.

The WSL is assisting in the development of water reuse technology to improve water use efficiency. The implementation of new water resource planning and evaluation tools is in underway.



Measuring algal productivity in Japan

