Assessment and synthesis of 13 years of Atitlán lake and watershed data for water quality improvements

ABSTRACT

Stephen McCord traveled in March 2024 and July 2025 for two-week visits to Guatemala. He was hosted by the Centro de Estudios Atitlán, a research group at the Universidad del Valle de Guatemala, Altiplano campus in Sololá. The lake's watershed is being degraded by uncontrolled land use, minimal trash and sewage management, and unreliable potable supplies. Climate change impacts exacerbate conditions. Occasional toxic algae blooms, uncontrolled tilapia farming, and shoreline weed growth are expressions of the watershed's condition and human impacts. The assignment was to support the center's ongoing lake monitoring and research activities. During his first visit, he participated in monthly lake and potable water sampling events and presented three seminars to the research group on related topics. On the second visit, he visited more of the watershed, and met with government, religious, and nonprofit partners to discuss their priorities and activities, and help to identify opportunities to improve operations and collaboration.

This project's primary beneficiary was the CEA team of about 10 full-time employees doing the monitoring, analyzing, educating, and outreaching. Secondary beneficiaries were the regional environmental protection agency (2 employees directing education and monitoring activities), local friends of the lake nonprofit (25 employees), municipal partners around the lake (watershed population totals about 450,000), and a lakeside community's Catholic parish aiming to provide a hospice care facility.

Volunteer: Stephen McCord

Education: PhD (UC Davis) and licensed Professional Engineer (in California)

Current positions:

- President, McCord Environmental
- Project Manager, UC Davis

Photos are included in the project report—please request original files.