

Luquillo LTER

A Platform for Spotlighting Global Change



The Luquillo Long-Term Ecological Research (LTER) program is a consortium of institutions focused on exploring the complexities of tropical ecosystems in a montane forest setting. The focal landscape is the Luquillo Mountains in northeast Puerto Rico. LUQ-LTER serves as a platform for conducting comprehensive monitoring, experiments, and modeling at various temporal and spatial scales, examining how disturbances such as hurricanes, drought, and climate warming influence soils, vegetation, streams, animal populations, and nutrient cycling.

This unique partnership brings together scientists, students, staff, and educators from Puerto Rico, the United States, and internationally to investigate the effects of global change, using an interdisciplinary approach to identify patterns and trends and predict future conditions. By leveraging collective expertise, LUQ-LTER provides valuable insights into the evolving health of our tropical forests, positioning itself as a leader in ecological discovery. We make our findings available to the public through our long-term data catalog and via innovative education and community engagement activities.

Photo by María M. Rivera

Visit our
website!



The National Science Foundation (NSF) created the Long-Term Ecological Research (LTER) Program in 1980 in order to understand the dynamics of ecosystem processes. Focusing on long-term, broad-scale research; multi-disciplinary teams; and collaborative efforts, LTER has become one of the most successful programs conducting research in ecology, with 27 sites covering a diverse range of ecosystems in the continental U.S., Alaska, Antarctica, and islands in the Caribbean and Pacific. Puerto Rico's Luquillo site (LUQ) entered the program in 1988. For more visit lternet.edu

LUQUILLO LTER

Understanding ecological change through long-term monitoring and experiments

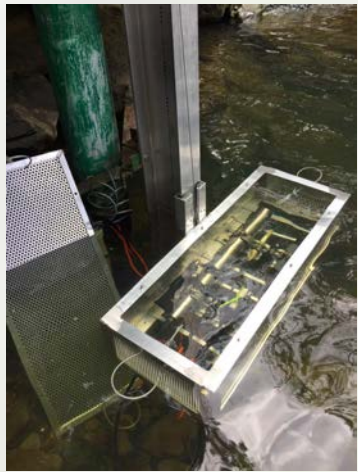
Our research and education activities occur at multiple sites and study plots located in the Luquillo Experimental Forest (also referred to as El Yunque National Forest). One of our study areas is the Luquillo Forest Dynamics Plot (LFDP), a 16-hectare forest plot located near El Verde Field Station (see map). The LFDP has become a laboratory for testing ideas that explain the high diversity of tropical forests. We collect data about plants, invertebrate and vertebrate organisms, and environmental variables such as soil moisture and canopy light. Information from the LFDP contributes to the efforts of the Global Earth Observatory Network (ForestGEO; <http://www.forestgeo.si.edu/>) of large forest plots that was set up to improve our understanding of forest ecosystems and to predict their future composition, structure, and ecological functions.

NAVIGATING EXTREMES: STREAM MONITORING AND A DROUGHT EXPERIMENT

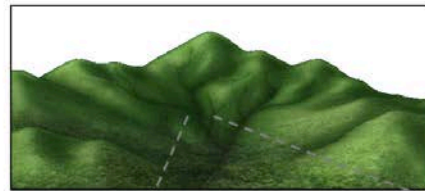
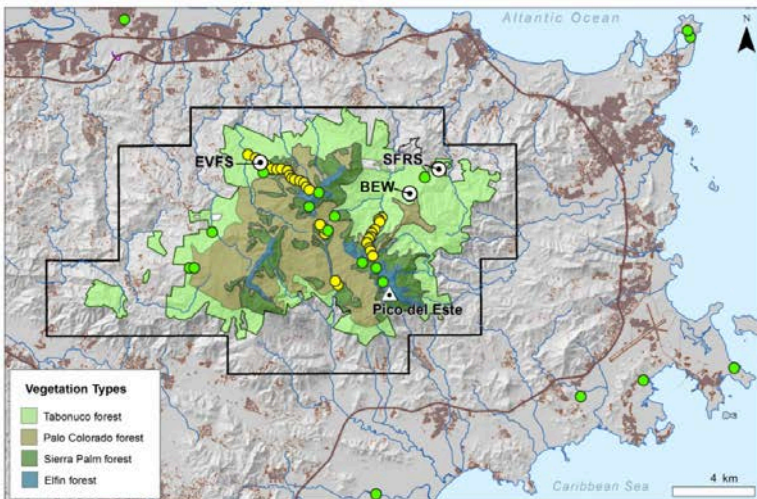
We also monitor the streams and rivers of the LUQ-LTER by collecting and analyzing water samples in collaboration with several research labs and through an extensive network of sensors. These measurements enable us to quantify the physical and chemical properties and fluxes of water, sediment, and solutes from the forest. Another study is the Stream Flow Reduction Experiment (StreamFRE), also located at El Verde Field Station (EVFS). StreamFRE is designed to examine the responses of streams to reduced water flow of a warmer, drier climate. Other long-term ecosystem and climate research occurs at the Bisley Experimental Watersheds (BEW), Sabana Field Research Station (SFRS), and Pico del Este.



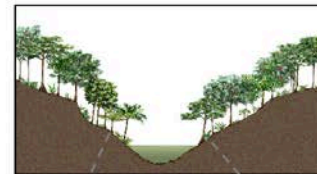
GET INVOLVED!



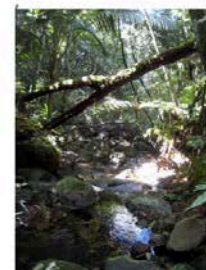
We do monitoring & manipulative experiments at multiple spatial scales w/in rural tropical montane forest setting



Landscape scale



Catena scale



Stand/reach scale

There are many different opportunities for scientists, students, educators and others to get involved in LUQ-LTER activities. For more information visit our website: luquillo.lter.network