

Introduction

Section contents

Methods

Field location information

Research was conducted in the Luquillo Experimental Forest (LEF), Puerto Rico, USA (18° 18' N, 65° 50' W). The forest is congruent with El Yunque National Forest managed by the US Forest Service. Field measurements were made at El Verde Research Station, a site well characterized as part of the on-going Luquillo Long-Term Ecological Research (LUQ) and the Luquillo Critical Zone Observatory (LCZO) projects based in the LEF (Hall et al. 2012; Silver et al. 1999; Silver et al. 2014).

things to consider citing: (Scatena 1989, Silver et al. 1999, Liptzin et al. 2011, Hall et al. 2012, Wood and Silver 2012).

The LEF contains approximately 11,500 ha of contiguous forest area, spanning an elevation gradient from approximately 350 to 1075 m above sea level.

We will make use of a range of environmental conditions present in the LEF to compare and contrast bedrock types (volcanoclastic and dioritic), topographic zones (ridge, slope, upland valley, riparian valley) and precipitation regimes (windward to leeward, lower and upper elevation). These sites have all been well characterized as part of the on-going LTER and the LCZO projects based on the LEF (Scatena 1989, Silver et al. 1999, Liptzin et al. 2011, Hall et al. 2012, Wood and Silver 2012). Soils in the LEF are derived from volcanoclastic sediments with quartz diorite intrusions (Beinroth 1982). Soils are predominantly classified as Ultisols and Oxisols (Scatena 1989, USDA NRCS 2002). Mean monthly temperatures range from 23.5°C in January to 27°C in September at low elevation, and from 17 to 20°C in the upper elevations. Precipitation ranges from less than 3000 mm y⁻¹ in the low elevations and leeward sites to