

Title: The NGEE-Tropics Data Archive and Data Curation Activities

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Project: NGEE-Tropics (led by Berkeley Lab)

Project Website: <https://ngee-tropics.lbl.gov/>

Project Abstract:

The NGEE-Tropics Data Archive supports and stores ecological, hydrological, micrometeorological, and remote sensing data from tropical forests used to advance scientific understanding and to improve model behavior for these ecosystems. This includes providing data access for current and future research teams, evaluation of data packages being published for completeness, generation of digital object identifiers (DOIs), and supporting results from data quality assurance and quality control (QA/QC) activities for the project. Since 2016, the NGEE-Tropics team has collected data from 21 sites across the tropics, data which was foundational to studies at site, regional, and pantropical scales. Current NGEE-Tropics Archive holdings include 96 public data packages, containing, for instance, leaf related data, including variables such as leaf mass area, leaf respiration, phenology, and water potential, and soil data encompassing soil chemical composition, water content, and temperature, and also includes data on related to sap flow, meteorological measurements, tree mortality, root data, and model codes and outputs. A review of the metadata quality is performed prior to publication, and whenever suitable, our metadata reporting templates (FRAMES) allow researchers to provide file-, measurement-, and experiment-level metadata to accompany their data. Data QA/QC activities are also an integral part of the data-related activities for NGEE-Tropics, including, for instance, micrometeorological datasets prepared and now available for sites in Panama, and more recently sites in the Brazilian and Peruvian Amazon, including collaborative work on data from the partner LBA Project. The NGEE-Tropics Archive provides a tailored user experience in creating and validating these datasets, while also synchronizing and making these datasets also available in the ESS-DIVE Archive, aiming at the long-term preservation of access to these data. Several of these datasets are already being used in empirical and synthesis studies of tropical forests and also for ecosystem modeling efforts through the NGEE-Tropics Functionally Assembled Terrestrial Ecosystem Simulator-FATES model.