

La Yeguada Volcanic Complex: An Assessment of the Geologic Hazards Using New Ar⁴⁰/Ar³⁹ Ages

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Abstract

La Yeguada volcanic complex is one of three Quaternary volcanic centers in Panama, and is located on the southern slope of the Cordillera Central mountain range in western Panama, province of Veraguas. To assess potential geologic hazards, this study focused on the main dome complex near the village of La Laguna and also examined a cinder cone 10 km to the northwest next to the village of Media Luna. Based on newly obtained ⁴⁰Ar/³⁹Ar ages, the most recent eruption occurred approximately 45 000 years ago at the Media Luna cinder cone, while the youngest dated eruption at the main dome complex occurred 0.357 ± 0.019 Ma, producing the Castillo dome unit. Cerro Picacho is a separate dome located 1.5 km east of the main complex with a date of 4.47 ± 0.23 Ma, and the El Satro Pyroclastic Flow unit surrounds the northern portion of the volcanic complex and has an age of 11.26 ± 0.17 . No Holocene activity is recorded at the La Yeguada volcanic complex and therefore, it is unlikely to produce another eruption. The emergence of a new cinder cone is a possibility, but the associated hazards tend to be low and localized, and this does not pose a significant threat to the small communities scattered throughout the area. The main geologic hazard at the La Yeguada volcanic complex is from landslides coming off the many steep slopes.