

Geological and Structural transect across the northernmost Cordillera Real

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The Cordillera Real (CR) is the easternmost of the 2 main ranges that cross Ecuador from north to south. It is formed by Paleozoic – lower Cretaceous metamorphic rocks and Mesozoic granitoids, while to the east of the CR, there are Cretaceous and Tertiary sedimentary rocks of the retro – arc Amazon foreland basin, which unconformably overlie the western edge of the Precambrian Guyana Craton (Litherland & Aspden, 1992); (Litherland, Aspden, & Jemielita, 1994). In Ecuador, the boundary between South American autochthonous rocks and accreted material is unclear in places. Due to this, the CR has been interpreted to have been formed both as an accreted terrane (Litherland & Aspden, 1992) and as part of the South American plate (Pratt et al., 2005). Most geological studies that have been carried out in the CR have focused in the central and southern parts of the CR range (e.g. Spikings et al., 2014; Spikings et al., 2010; Noble et al., 2015). In particular, the Baños-Puyo and the Papallacta – Baeza transects have been well studied (e.g. Pratt et al., 2005); (Litherland & Aspden, 1992). On the other hand, there are few studies of the northern CR, and they have mostly focused on thermochronology (Spikings et al., 2000). This is evident when comparing different maps of the area, as they all show discrepancies in the contacts and extent of various lithologic units (e.g. CODIGEM and BGS map, 1994); (Instituto Ecuatoriano de Minería map, 1981). Furthermore, this lack of information from the northern CR, can hinder the correlation of tectonic models between the Cordillera Central of southern Colombia and the central and southern CR. Therefore, in this project, we will carry out a detailed stratigraphic and structural study of the northern part of the CR, which will help constrain the tectonic evolution of this zone.

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