

Site Name: Llanio Fawr

Grid Reference: SN 637565

RIGS Category: Educational & Scientific

Earth Science Category: Quaternary & Geomorphology

RIGS Statement of Interest:

A series of aligned to chaotically oriented, low (<2 m high), elongate ridges, in places enclosing shallow intervening depressions, are located near Llanio Fawr in the Nant Brynmaen Valley. These landforms have been interpreted as the collapsed forms of open system pingos (for this and other definitions, see Geological setting section below) associated with the thaw of perennially frozen ground (permafrost) at the end of the last ice age (ca. 15,000 years before present) (Watson & Watson 1974; Sheppard 2003). The morphology and sedimentology of these landforms, however, are not consistent with this model. Because they are cored with sand and gravel, these ridges were most probably deposited by meltwaters from the margin of the northeastward retreating Teifi glacier (Jones 1965; Waters et al. 1997). Alternative processes for the development of these landforms could be 1) fluvio-glacial sedimentation around and above melting blocks of stagnant glacier ice; or 2) fluvio-glacial deposition on the surface of proglacial icings (also known as naledi or aufeis) (Ross et al. 2007). The Llanio Fawr landforms therefore have the potential to contribute key information about the deglaciation of the upper Teifi Valley at the end of the last ice age. Geophysical surveys (electrical resistivity tomography and seismic refraction) have indicated that these landforms rest on >30 m of unconsolidated materials (Ross et al. 2007).

Surveyed by: N. Ross