

Afar-Danakil Depression (Dallol & Erta'ale volcano)

Erta'ale is an exceptional volcano. It has been an active lava lake for a very long period, probably since the mid nineteenth century. It is part of a chain of active volcanoes located in the center of one of the six Afar rifts where an open ocean has formed in connection with a hot spot. The broad, 50-kilometer-wide volcano rises more than 600 meters from below sea level in the barren Danakil depression.

Erta-Ale is the namesake and most prominent feature of the Erta-Ale Range. It has a 0.7 x 1.6 kilometers, elliptical summit crater housing steep-sided pit craters. Another larger 1.8 x 3.1 kilometer-wide depression elongated parallel to the trend of the Erta-Ale range is located to the southeast of the summit and is bounded by curvilinear fault scarps on the southeast side. Fresh-looking basaltic lava flows from these fissures have poured into the caldera and locally overflowed its rim.

The summit caldera is renowned for one or sometimes two long term lava lakes that have been active since at least 1967, or possibly since 1906. Recent fissure eruptions have occurred on the northern flank of Erta-Ale. Given its age, scientists think the lake must have a continuous link to a shallow magma chamber, which is itself fed on a regular basis by magma uplifts more directly connected to the formation of the rift.

The Danakil Depression is one of the most challenging environments on the planet. The scorching sun makes any journey to the depression, more than 125m below sea level, difficult. Many Tigrean highlanders along their camel, mule and donkey caravans, however, travel for weeks to the depression (locally known as "Arho or Regged") in the off-farm season to mine bars of salt to sell for extra earnings. Traditionally, the "Arhottai" (the one who makes journey to Arho) feeds himself by baking special bread known as "Bircutta".