

Recent glacier mass balance calculations at Volcán Mocho-Choshuenco (40°S), Chilean Lake District

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Abstract The majority of glaciers in the Chilean Lake District (38°–42°S) have experienced shrinking and ice thinning during recent decades, presumably in response to climatic changes as observed at nearby meteorological stations. One of these glaciers is the southeastern basin of Volcán Mocho-Choshuenco (39°55'S, 72°02'W), a dormant volcano which has not experienced fumarolic activity since 1864. In order to analyse the glacier response to climatic conditions affecting this region, a monthly based mass balance programme was initiated in 2003. This paper presents new results and discusses the mass balance method applied during recent years. The 2004/2005 glacier average net mass balance yielded $+0.36 \pm 0.07$ m w.e. year⁻¹ (metres of water equivalent per year) with a winter balance of $+4.04$ m w.e. year⁻¹ and a summer balance of -3.73 m w.e. year⁻¹. This positive mass balance is analysed in comparison to El Niño Southern Oscillation (ENSO) phenomena observed during recent years, as well as previous mass balance results.

Key words Chilean Lake District; climate changes; glacier mass balance; ice-capped volcanoes; precipitation
