

Recent glacier advances at Glaciar Exploradores, Hielo Patagónico Norte, Chile

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(Received September 29, 2006; Revised manuscript accepted November 22, 2006)

Abstract

With the purpose of establishing the recent glacial chronology of the HPN, moraines at Glaciar Exploradores were identified and investigated, thereby collecting samples for ¹⁴C dating. In total, three moraine systems were recognized, the Invernada moraine (TM1), main moraine (TM2) and the modern (secondary) moraines (TM3). TM3 was further subdivided into TM3-1 and TM3-2 based on vegetation cover, size, morphology, degree of rock weathering, and development of mosses on rocks. Two samples from TM1, six samples from TM2 and seven samples from TM3 were dated. Also the number of tree rings was counted at TM2 and TM3. Based on these data, four possible scenarios were postulated and examined. The tentative conclusion is that there were two recent glacial advances at Glaciar Exploradores, one sometime between the 12th and 17th century (forming main moraine, TM2) and the other around the early to mid-19th century (TM3-1) and after ca. 1944 (TM3-2). We could not obtain a date that would indicate the age of the Invernada moraine (TM1); however, from the age of TM2, it was speculated that it could be of the Neoglaciation III (1600–1300 BP).