

Early deglaciation and paleolake history of the Río Cisnes Glacier, Patagonian Ice Sheet 44°S

Supplementary information on the archaeological implications of this study

Juan-Luis García^{1*}, Antonio Maldonado^{2,3,4}, María Eugenia de Porras^{2,5}, Amalia Nuevo Delaunay⁶, Omar Reyes⁷, Claudia A. Ebensperger¹, Steven A. Binnie^{8}, Christopher Lüthgens⁹, César Méndez^{**6}.**

- 1.- Instituto de Geografía, Facultad de Historia, Geografía y Ciencia Política, Pontificia Universidad Católica de Chile, Avenida Vicuña Mackenna 4860, Macul, Santiago, 782-0436, Chile.
- 2.- Centro de Estudios Avanzados en Zonas Áridas, La Serena, Chile.
3. Instituto de Investigación Multidisciplinario en Ciencia y Tecnología, Universidad de La Serena, la Serena, Chile.
4. Departamento de Biología Marina, Universidad Católica del Norte, Larrondo 281, Coquimbo, Chile.
5. Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales (IANIGLA), CCT Mendoza CONICET, Av. Ruiz Leal s/n, Mendoza, Argentina
- 6.- Centro de Investigación en Ecosistemas de la Patagonia, Moraleda 16, Coyhaique, Chile.
- 7.- Centro de Estudios del Hombre Austral, Universidad de Magallanes, Punta Arenas, Chile.
- 8.- Institut für Geologie und Mineralogie, Universität zu Köln, Greinstraße 4-6, Gebäude 902, 50939, Köln, Germany.
- 9.- Institute for Applied Geology, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria.

* Corresponding author. Phone #: 56-2-23544726; Fax #: 56-2-5526028. jgarciab@uc.cl

** Corresponding author for this supplement. Phone #: +56-67-2247801. cesar.mendez@ciep.cl.com

Main implications

The earliest anthropogenic evidence in the region dates to 11.6 ka at El Chueco 1 site at 940 m a.s.l. in Río Cisnes Valley and to 12 ka at Cueva de la Vieja site in Ñirehuao at 720 m a.s.l. (Méndez et al., 2016; 2018; Fig. 1). These two cave sites have provided evidence for basal occupations where few lithic artifacts on locally procured tool-stones were excavated in association with charcoal concentrations and/or hearth features (Méndez et al., 2011; 2018). These occupations are of very low intensity as suggested by low discard rates and the fact that they show no visible bone material (charred bones have been identified in micromorphological soil thin cuts at Cueva de la Vieja) and only very few charred seeds (Belmar et al. 2017; Méndez et al. 2018).

When compared to data presented in this paper, the earliest ages at these sites suggest human beings first entered the Río Cisnes Valley and the Ñirehuao Valley under fully deglaciated conditions, including already drained paleolakes. In this regard, early inhabitants should have recognized a landscape setting recently free of glacial influence though different to the present one regarding the distribution of vegetation units and variable atmospheric conditions at the Pleistocene-Holocene transition (dePorras et al., 2012; 2014).

Archaeological sites on the eastern slope of the Andes south of Cisnes and Ñirehuao show a similar chronological time frame for the first

human occurrence, suggesting a supraregional occupation once free-of-ice conditions were attained in central-south Patagonia (Belardi et al., 2010; Franco and Borrero, 2003; Civalero and Franco 2003). This scenario is different to that found further south in the Última

Esperanza region (51°S), where an early human occupation at 12.7 ka suggest anthropogenic cohabitation with the deglacial Patagonian landscapes (Martin and Borrero, 2017).

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