

**Category**

EN Environment & BE Biology, Ecology, Ecosystems, Biodiversity & GG Geology, Geophysics, Solid Earth

**Session Number**

EN-6

**Session Title**

Reconstructing past environmental change in the Polar Regions

**Session Description**

This session aims to stimulate multidisciplinary discussion and facilitate an integrated understanding of the physical, ecological, and climatic consequences of past environmental changes in terrestrial Polar ecosystems. The Polar Regions respond quickly to environmental changes and these responses are preserved in, for example, lake sediments, periglacial deposits, annual growth rings, ground ice, fluvial/alluvial and coastal deposits. Such proxy records provide important natural archives of past environmental changes within the most rapidly warming biome on Earth. Multidisciplinary palaeostudies that provide analogues of recent and future perturbations in Polar environments, and that help identify boundary conditions to ice / land / ocean / atmosphere feedbacks that influence regional and global climate are welcomed, as are long-term monitoring studies, short-term experiments and complementary palaeoecological studies implementing monitoring data that address the effects of environmental change on Polar ecosystems. Another key aim of this session is to bring together the scientific community using Polar terrestrial records of past environmental change to formulate a series of outstanding research questions and develop new collaborations. These could be based around, for example: (i) past changes in climate and relative sea level; (ii) changes in food-web structure, including nutrient deposition and land-use changes; (iii) colonization by non-native species.

**Keywords:** Arctic, Antarctic, climate variability, natural records, biodiversity

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