

Kerschner, H., A. Hertl, G. Gross, S. Ivy-Ochs, P. W. Kubik (2006): Surface exposure dating of moraines in the Kromer valley (Silvretta Mountains, Austria) - evidence for glacial response to the 8.2 ka event in the Eastern Alps ? *The Holocene* 16(1), 7-15.

Abstract

Abstract: ^{10}Be dating of a pronounced glacier advance ('Kromer Stadial') in the western part of the Silvretta Mountains (western Austria) yielded ages ranging from 8010 ± 360 to 8690 ± 410 years with a mean age for moraine stabilization of 8410 ± 690 years. Hence, the Kromer Stadial, which was previously considered as early Preboreal, may represent the glacier response to the early phase of the '8.2-ka event', as it is recorded in the Greenland ice-cores. The glacier advanced to a position beyond its 'Little Ice Age' (LIA) limit; the end moraines are situated 750-1000 m downvalley from the glacier ends in 1850. The corresponding drop of the equilibrium line altitude relative to the LIA datum was 75 m. The glacier advance was followed by a period of glacier recession and rock glacier development. In total, the climatic fluctuation may have lasted for about 500 ± 200 years. The age and duration of the climatic fluctuation is in good accordance with the 'Misox cold phase' and CE-3 climatic fluctuation as recorded in Switzerland. Climate during the Kromer Stadial was characterized by more humid conditions than today along the northern fringe of the Alps and slightly negative to moderately positive changes in precipitation in the central part of the Austrian Alps. Summer temperatures changes were most likely in the order of -1 to 0K. Mean annual temperature was 1.5K to 2K lower than today, at least during the second phase of the climatic fluctuation.