Geophysical Research Abstracts
Vol. 15, EGU2013-9461, 2013
EGU General Assembly 2013

Holocene vegetation change in the eastern Pamirs, Tajikistan, inferred from the pollen record of Lake Karakul

Liv Heinecke (1,2), Ulrike Herzschuh (1,2), Steffen Mischke (2,3)

(1) Alfred Wegener Institute of Polar and Marine Science, Research Unit Potsdam, Germany, (2) University of Potsdam, Institute of Earth and Environmental Science, Germany, (3) Free University of Berlin, Institute of Geological Science, Germany

The topography of Central Asia is characterized by large differences in altitude which complicates the discussion about regional patterns of climate history. An increasing number of local studies concerning the Holocene climate changes in this region revealed significant spatial differences. However, more records are needed to allow for a discussion about regional patterns of climate history. Here we present the first palynological study from a lake sediment core of Lake Karakul in the eastern Pamir Mountains, Tajikistan, that reaches back into the early Holocene.

Lake Karakul is a deep brackish-water lake that lies embedded in a closed basin at ca. 4000 m above sea level. It is regarded as a valuable archive due to its remoteness and almost absent human impact. In 2012, the short-core KK12-15 was retrieved from 238 m depth in the center of the deep western sub-basin of the lake and analysed for its pollen assemblages.

Vegetation changes are well recorded throughout the core and correspond with an earlier study that was conducted on a late Holocene sediment core from the shallow eastern sub-basin of Lake Karakul. Although *Artemisia* is the dominating species (60-80 %) in both studies, the results show clear changes in the vegetation composition and reflect thereby variations of climate conditions. In the lower part of core KK12-15, higher percentages of *Ephedra fragilis*-type were found. As *Ephedra* generally represents desert vegetation it indicates towards drier conditions that were also reconstructed for many regions of Central Asia during the early Holocene. These findings correspond well with the result of radiocarbon dating, which indicates an age of 12660 cal. yr BP for the base of core KK12-15.