

## Arctic, Antarctic, and Alpine Research

Vol. 31, No. 4, November 1999

### Late Wisconsin and Holocene Subalpine Forests of the Markagunt Plateau of Utah, Southwestern Colorado Plateau, U.S.A. (pp 366-378)

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The vegetation and climatic history of subalpine forests on the Colorado Plateau is documented from Lowder Creek Bog and Alpine Pond on the Markagunt Plateau. Pollen and macrofossil data demonstrate substantial changes at sites above 3150 m elevation during the last ca. 13,000 yr. During and after Late Wisconsin deglaciation, subalpine tree species (*Picea engelmannii* and *Abies lasiocarpa*) were rare or absent near Lowder Creek Bog site, but nonarbooreal species predominated. *P. engelmannii*-*A. lasiocarpa* forest became well established there between 11,000 and 9800 yr BP and subalpine trees dominated this elevation throughout the Holocene. By ca. 8500 yr BP, however, *Picea* declined somewhat, with minimal pollen and macrofossil deposition occurring between ca. 8500 and 6400 yr BP. *Picea* trees may have thinned during this time or *Picea* may have expanded to higher elevations during this part of the Holocene, while *Pinus ponderosa* expanded at lower elevations. These changes were probably driven by warmer conditions with variable precipitation. Alternative explanations include hydroseral changes within the bog, or insect infestation on *Picea*. After ca. 6400 yr BP, more consistent *Picea* pollen influx suggests renewed importance around the bog, which has been maintained until the present. *Abies lasiocarpa* became more important after ca. 2700 yr ago. The pollen sequence supports an interpretation of high effective precipitation during the early Holocene, followed by warmer temperatures and somewhat variable precipitation after ca. 8500 yr BP. This sequence is most similar to other sites on and near the western, southern, and northeastern Colorado Plateau, where the maximum influence of monsoon activity may have declined by the end of the early Holocene. Declines in summer insolation probably contributed to Late Holocene cooling, with increasing effective precipitation at most sites, including Lowder Creek Bog.