

LATE-QUATERNARY VEGETATION HISTORY OF JACKSON HOLE, WYOMING

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Objectives

During the late Quaternary, the Jackson Hole area has been repeatedly glaciated—the most recent and least extensive ice advance occurred during the Pinedale Glaciation (ca. 25,000–9,000 yr B.P.; Love and Reed, 1971). The objective of this research is to study the vegetation history of Jackson Hole since Pinedale time, as a means of interpreting the development and stability of modern plant communities. The research is based on an examination of pollen and plant-macrofossil records contained in lake-sediment cores collected near the former ice margin. The environmental history of this region is poorly known and the paleoecological information provided by this study should help fill a gap in our understanding of the vegetation, climate, and glacial history of the Northern Rocky Mountains.

Methods and Results

Field work this past summer focused on locating sites with long sedimentary records suitable for pollen and macrofossil analyses. Promising sites were identified first from topographic and geologic maps, and aerial photographs, and later checked in the field. Two fens were selected for further study. Both sites are located on recessional moraines of the Yellowstone icecap and should have accumulated sediments since Pinedale time. Cores were taken with a 5-cm-diameter Livingstone sampler from the fen surface. The location of these sites and a generalized stratigraphy are as follows:

1. Lily Lake Fen, Teton National Forest
lat. 46° 12' 50" N, long. 110° 19' 30" W
altitude 2447 m
0.00–7.00 m Carex peat
7.00–8.75 m coarse-detritus lake mud (gyjta)
8.75–11.50 m fine-detritus lake mud
11.50–14.50 m organic silty clay
2. Two Ocean Lake Fen, Grand Teton National Park
lat. 43° 54' 10" N, long. 110° 32' 30" W
altitude 2124 m
0.00–0.70 m Carex peat
0.70–3.60 m marly lake mud with molluscan shells

3.60-4.00 m organic silty clay
4.00-4.05 m mixed sand and gravel

Conclusions

The basal sediment at each site has been submitted for radiocarbon dating to determine the age of the deposit. Pollen and plant-macrofossil analyses and additional radiometric dating of the cores will be the next phase of the research.

Literature Cited

Love, J. D. and Reed, J. C., Jr. (1971). Creation of the Teton landscape—the geologic story of Grand Teton National Park. Grand Teton Nat. Hist. Assoc. 122 pp.