A Detailed 2,000-Year Late-Holocene Pollen Record from Lower Pahranagat Lake, Southern Nevada, USA

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Abstract

Preliminary analysis of 128 pollen samples and 7 radiocarbon dates from a 5-meter-long, 10-centimeter-diameter sediment core retrieved from Lower Pahranagat Lake (elevation 975 meters), Lincoln County, Nevada, gives us a rare, continuous record of vegetation change at 14-year intervals over the past 2,000 years. During this period, increasing *Pinus* (pine) pollen values with respect to *Juniperus* (juniper) pollen values reflect the increasing dominance of pinyon in southern Nevada woodlands during the past 2,000 years. Today, *Pinus* pollen values indicate that pinyon pine is more frequent in the southern Great Basin since the end of the Neoglacial 2,000 years ago. During the same time frame, a general decrease in Poaceae (grass) pollen values with respect to *Artemisia* (sagebrush) pollen values reflects the general trend of increasing dominance of steppe and desert scrub species with respect to grasses. Variations in these two species reflect not only the generally more xeric nature of climate during the past 2,000 years, but also periods of summer-shifted rainfall about 1,500 years ago that encouraged a period of both grass and pinyon expansion.

The ratio of aquatic to littoral pollen types indicates generally deeper water conditions 2,000 to 1,000 years ago and more variable, but predominately more marshy, conditions at the site during most of the past 1,000 years. Investigation of ostracodes from the same record by Dr. R. Forester at the USGS corroborates the pollen record by providing evidence of shifts between open and closed hydrologic systems, including lake, marsh, and even stream habitats. Analysis of an additional 10 meters of core recovered in the summer of 1994 with a basal date of 5,600 years ago promises to provide the highest resolution record of middle through late Holocene vegetation and climate history for southern Nevada.

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