
University of Pennsylvania



Institute for Environmental Studies

presents

Gary N. Paulachok

U.S. Department of the Interior
U.S. Geological Survey - Office of the Delaware River Master

Hydrologic Aspects of the 2001-2002 Drought in the Delaware River Basin

A notable drought in the Delaware River Basin during winter 2001 and continuing into fall 2002 has had major effects on surface and subsurface components of the hydrologic system. Drought conditions were the result of primarily two factors - an absence of tropical moisture and patterns of atmospheric circulation that diverted Gulf and subtropical Atlantic moisture away from the basin. On December 1, 2001, the combined storage in three New York City water-supply reservoirs in the upper Delaware River Basin stood at 66 billion gallons or 24% of usable contents, which was 122 billion gallons less than long-term median storage. Combined storage reached its lowest level in 34 years of record keeping during December 2001 and January, March, and April 2002. During the spring of 2002, with the onset of the growing season, the 12-month cumulative precipitation deficiency was greater than 12 inches in the upper Delaware River Basin. This deficiency was the result, in part, of a mild winter that produced little snowpack. Currently, 12-month cumulative precipitation deficiencies in most parts of southeastern Pennsylvania, western New Jersey, and northern Delaware exceed 12 inches. Except for several months during summer 2002, flows in many streams, particularly in the lower basin, have decreased to the lowest levels since the 1960's. The drought has had a profound effect on ground-water levels, and the combination of below-normal recharge, evapotranspiration, and intensive water use has resulted in continued low or record-low water levels in many parts of the basin.

Date: Thursday, October 24, 2002

Time: NOON - 1:30 pm

Place: Auditorium at Wistar Institute

On Penn's campus: Spruce Street & Penn's 36th Street Walkway

NO REGISTRATION REQUIRED

Direct questions to:

215-573-3164; ies_penn@sas.upenn.edu

<http://www.sas.upenn.edu/geology/ies>
