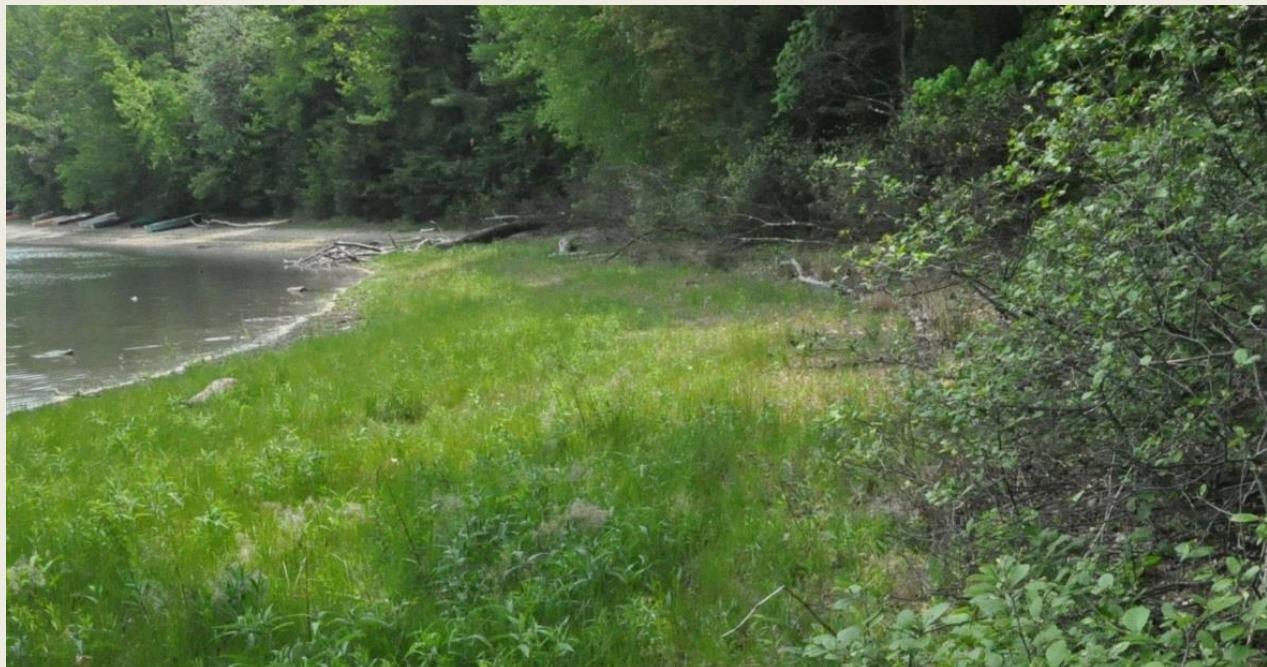


An Investigation into the Water-Surface Elevation Changes of Moreau Lake, Moreau Lake State Park, Saratoga County, NY

U. S. Geological Survey, in Cooperation with New York State Office of Parks, Recreation and Historic Preservation

Problem: In 2015, New York State Park officials monitoring the operation and public use of Moreau Lake observed a 4-5 feet decrease in the lake level. Anecdotal observations indicate that seasonal fluctuation of lake level is normal; however, the latest decline appears to be unprecedented.



Moreau Lake, May 2016. Historic lake shoreline is indicated by tree line.

Background: Moreau Lake is located within Moreau Lake State Park, a 4,100 acre park divided by the Hudson River in northern Saratoga and southern Warren Counties of upstate New York. Moreau Lake has a surface area of 128 acres, a watershed of 469 acres, and 3.6 miles of shoreline. The lake has a “normal” mean depth of 32 feet and a maximum depth of 50 feet. The lake is considered a kettle lake and is surrounded by ice-contact sand and gravel deposited by meltwater as glaciers retreated from the area at the end of the last Ice Age. Moreau Lake is a recreational water body used by the public for swimming, fishing, and boating and the surrounding area is used for hiking, camping, and beach activities.

Objective: Document the water-surface elevation of Moreau Lake, define the local hydrogeologic framework from available data, and assess the connection between lake level and the water-table elevation.



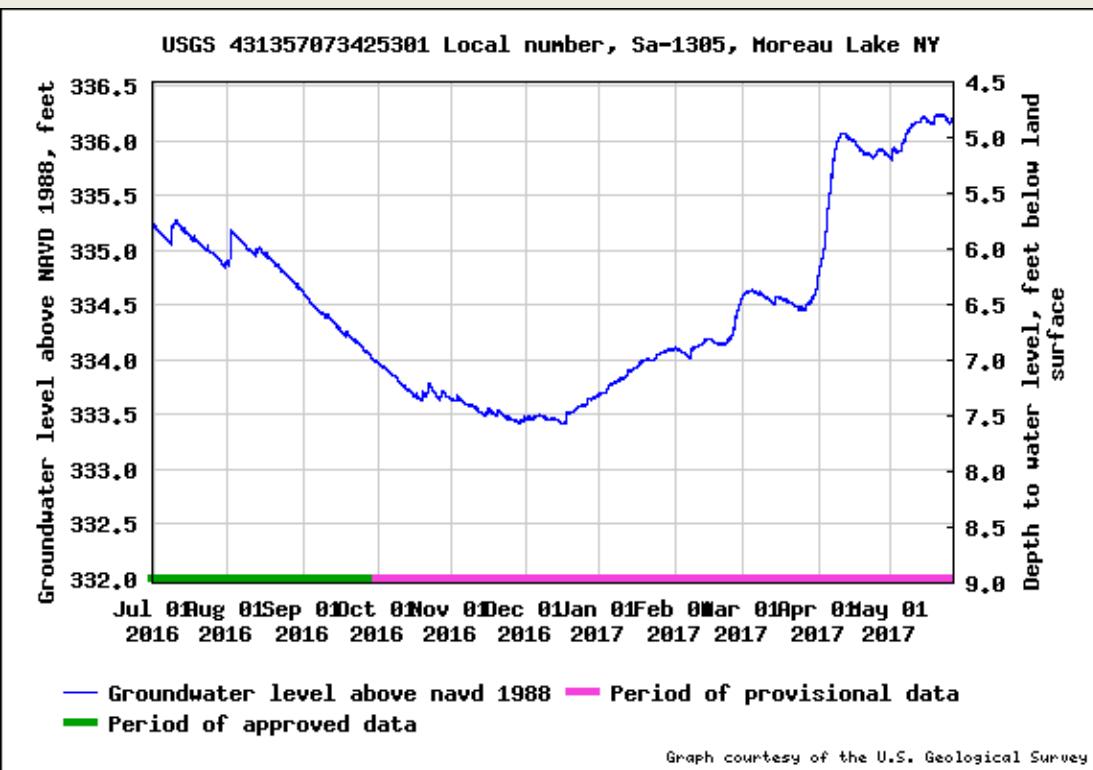
**Parks, Recreation
and Historic Preservation**

-Continued-

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Moreau Lake State Park, Saratoga County, NY

Approach: Lakes in areas of sand and gravel are generally a surface-water expression of the local water table. However, previous work at Moreau Lake has shown that there is also a confined aquifer just east of the Park that may have hydraulic connection to the lake in addition to the water-table aquifer. Thus, documenting water levels in the lake, the water-table aquifer, and the confined aquifer and characterization of the local hydrogeologic framework are needed to understand the local hydrologic situation. We propose, as a first step, to:

- Install a continuous lake-level gage at Moreau Lake. This gage will serve the dual need to monitor current conditions and to document changes in lake levels.
(Installed July 2016)
- Compile, from existing data, any relevant information that helps define (1) the hydrogeologic framework surrounding the lake and (2) groundwater-level elevations in both aquifers.



Water-level data from well SA1305, a shallow well along the shoreline of Moreau Lake that approximates lake level. Current and historic water levels (plots or tables) can be accessed online by searching "SA1305, USGS".



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