

PALEONTOLOGY AND GEOMORPHOLOGY-FOSSILIFEROUS CAVE

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Abstract:

Fossiliferous Cave is a unique natural resource, located in the hamlet of Kyserike, Ulster Co. NY, very near the longest cave in the County (*Pompey's Cave System*). This small cave (approx. 120 feet) contains prolific fossil deposits that have weathered out of chert bearing limestone. Seasonal allogenic floodwaters enter the cave through solutionally enlarged bedding planes and the enlarged vertical entrance joint washing debris through the cave. During the wet season, a small stream can be heard through an unenterable opening that drains the cave. Even in the dry autumn months, water seeps through vertical fractures that control passage development. Cave development is primarily vadose in nature, having formed above the water table. Water resurges through the well developed Pompey's master resurgence spring 350 meters to the east.

Objective:

This report documents the geology and speleogenesis of the cave system as well as discussion of the hydrological workings of the drainage basin. In addition, index fossils and local limestone stratigraphy will be identified. Comparisons to nearby *Pompey's Cave* based on lithology and topographic setting, will also be addressed.

Methods:

Data will be presented in an Arc GIS (version 8.2) layout incorporating aerial photos, and topographic maps, overlain with important karst features, topographic contours and personal field study findings. Physical features will be documented with the use of an E-Trex GPS receiver. Fossil and stratigraphic conclusions will be based on research of existing karst reports, geologic maps and interviews.

Data Sources:

Photo source: NYS DOS –DOQQ's , Other background data is compiled from several cave publications including : "Speleogenesis-Evolution of Karst Aquifers" A.Palmer, et.al.; "Caverns of the Shawangunks" by Ernst Kastning & Steven Coen, re-issued 1998 ; "Stratigraphy and Structure of Dev./Silur. Rocks in the vicinity of Kingston, NY" Pedersen, K. et.al-Guidebook to field excursions 48th annual meet NYS Geological Assoc.;"Dynamics of cave development by allogenic water" A.N. Palmer, Acta Carsologica vol.30 no.2, 2001; "Caves and Karst of the Northeast-1991 Conv. Guide" compiled by Michael Nardacci.