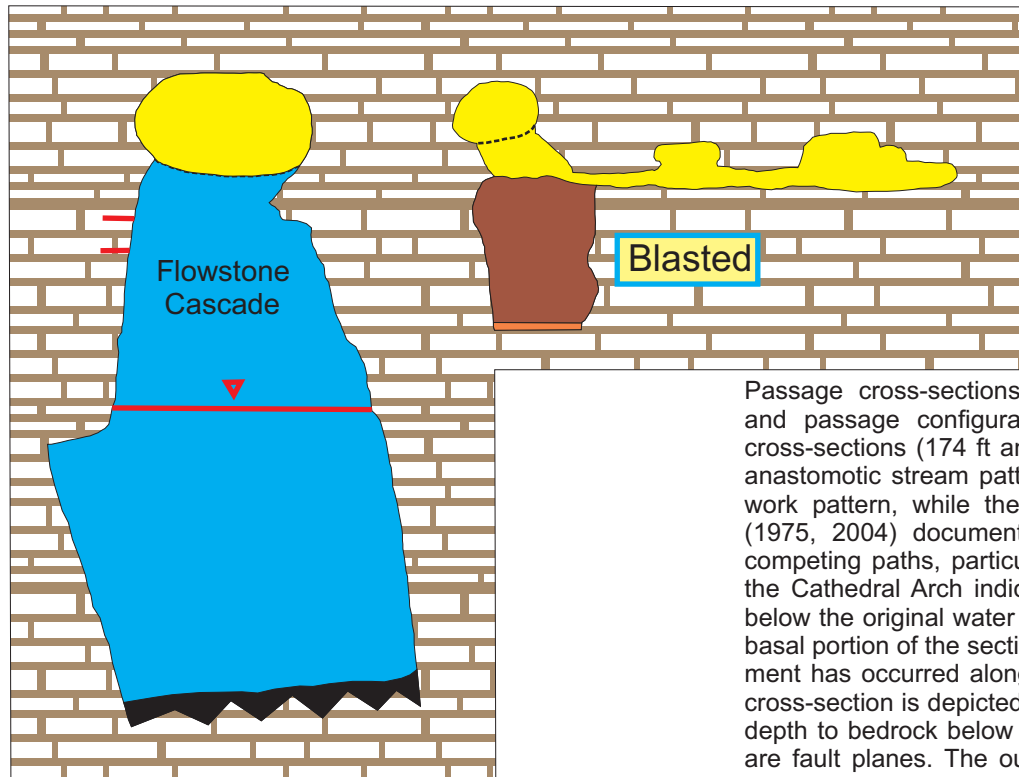


Underground Boating and Natural Pillar—Howe Caverns, N York

Cathedral Arch at the Pool of Peace (left) and above the Lake of Venus.



## Howe Caverns Cross-Sections The Cathedral Arch



Passage cross-sections in the downstream portion of Howe Caverns reveal the original stream and passage configuration during periods of phreatic development. Both the upper and lower cross-sections (174 ft and 56 ft upstm of the Lake of Venus, respectively) show in yellow the original anastomotic stream pattern. Upstream portions of the McFail's/Howe cave system exhibit a branchwork pattern, while the Bridal Altar and lower Howe Caverns exhibit a braided pattern. Palmer (1975, 2004) documents that maze cave formation requires simultaneous enlargement of many competing paths, particularly along bedding planes and (here) fault planes. The upper tube level of the Cathedral Arch indicates that the regional base level dropped and then stabilized some 19 feet below the original water level tube that formed at the Coeymans/Manlius contact. The canyon-shaped basal portion of the sections reflect a second drop in regional base level. Here, vadose canyon development has occurred along bedrock strike vs. meandering down dip as in the Winding Way. The upper cross-section is depicted looking upstream (NW) and the lower section looking down stream (SE). The depth to bedrock below sediment fill has not been determined. The short red lines along the sections are fault planes. The outlet area of Guenther Resurgence Cave may also be anastomotic. (Section mapping: Rubin and Porter)