Limiting Lamp Flora in Developed Passages Within Mammoth Cave

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Abstract

Lamp flora—a European term for the algae, mosses, and ferns that grow near electric lights—are a problem in nearly all show caves. These growths have been regarded as a "nuisance," but are actually a serious distortion to cave ecosystems. Control has been achieved largely via chemical treatments, which are indiscriminate killers. Ecological impact has been limited through careful application, but the safety of people doing this work remains as an issue. The idea of limiting lamp flora growth by wavelength selection is not new. This concept has arisen independently around the world over the past two decades. Though early tests were somewhat disappointing, recent advances in lighting technology, particularly Light Emitting Diode lamps, have made this approach feasible. Testing of yellow (595-nanometer) Light Emitting Diode lamps in Mammoth Cave has resulted in no re-growth of lamp flora in a former problem area over a 1.5-year period at an intensity of 4.6 foot-candles (49.5 Lux).