EFFECTS OF ARTIFICIAL LIGHT AT NIGHT ON BAT ACTIVITY AND SPECIES COMPOSITION IN AN OLD GROWTH URBAN FOREST. Katelyn M. Baker & Marielle Postava-Davignon, Dept. of Biol., Virginia Wesleyan Univ. While it is known that bats are present in Virginia Wesleyan University's old-growth beech forest due to past student research, the species composition in artificially lit and unlit areas requires further investigation. Ultrasonic bat sensors were placed at two locations on the edge of the Old-growth Beech Forest; one was placed in an artificially lit area near a streetlight while the other was placed in an unlit area. The ultrasonic sensor was programmed to collect data in response to the detection of certain frequencies, specifically frequencies above 16 kHz. Using Wildlife Acoustics Kaleidoscope software’s normal sensitivity bat auto-ID feature, 20 total bat species were identified. 18 bat species were detected in the artificially lit environment and 13 bat species were detected in the unlit environment. 11 of the bat species were found in both environments while the others were unique to either the artificially lit or unlit environment. Bat activity consistently decreased as time progressed into the winter months in the unlit area, while bat activity continued to increase again as time passed in the artificially lit area. Certain bat species were more abundant in the unlit area as opposed to the artificially lit area, as seen in the case of the Mexican free-tailed bat. Other bats preferred the artificially lit area, as seen in the case of the big brown bat. The data collected from surveying Southeastern Virginia for endangered or near-threatened bat species will inform conservationists to better protect native wildlife. Author contact: [kmbaker@vwu.edu](mailto:kmbaker@vwu.edu)