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Bat populations are declining due to habitat loss and the spread of the deadly fungal pathogen, white-nose syndrome. Increased studies of bat populations and their diversity are necessary to ensure their survival. Bat diversity and activity levels are understudied in the Northern Panhandle of West Virginia. For our study, sixteen sites were selected (four in each county: Ohio, Brooke, Hancock and Marshall). Using mobile ultrasonic bat detectors, bat calls were detected from different species at each location while walking a 1-kilometer transect after sunset. In addition, stationary recorders were placed in all four counties over the summer and in a subset of the counties during the fall and spring. Our null hypothesis suggests that sites/transects will not show any statistical difference of bat diversity in developed or undeveloped locations of West Virginia's Northern Panhandle. Our alternative hypothesis formulates that bat diversity will be statistically different between developed and undeveloped transects. Results from the summer transects show a significant difference between activity in developed and undeveloped sites ($p = 0.008433$). Sites were, and still are, being evaluated based on the number of species recorded at each site.