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# Accessibility or Environmental Conservation? Evaluating relationship between Environmental Protection and Hiking Trails Accessibility via LiDAR & UAV

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The Binghamton University Nature Preserve spans 190 acres of land, with a notable 20-acre wetland, and is a multifaceted space with several missions. It is dedicated to preserving the ecological integrity of this landscape, fostering biodiversity, and facilitating research and environmental education. Furthermore, it serves as a recreational space for students, athletes, and community members, enhancing the bonds between the campus and the neighboring community. This research focuses on Binghamton University Nature Preserve as a case study to explore the intricate balance between two vital objectives: ensuring equal access for all user demographics, while safeguarding the ecosystem services it provides. To achieve these objectives, the study employs a diverse array of public engagement methods, encompassing surveys and community mapping, to gather valuable insights from diverse stakeholders. Additionally, the research integrates cutting-edge technology, such as drones and remote-controlled vehicles equipped with iPhone LiDAR sensors to acquire comprehensive data on trail conditions and the surrounding environment. The innovative fusion of community input and high-tech data collection empowers a data-driven approach to environmental management, offering the potential to advance accessibility and sustainability simultaneously. By bridging the gap between these two fundamental considerations, this study not only enhances the Binghamton University nature preserve, but also paves the way for the formulation of inclusive and environmentally responsible public policies, potentially transforming the management of natural preserves nationwide.

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