



## **Gully measurement strategies in a pixel using python**

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Gullies are often the single largest sediment sources within the landscape; however, measurement and process description of these channels presents challenges that have limited complete understanding. A strategy currently being employed in the field and laboratory to measure topography of gullies utilizes inexpensive, off-the-shelf cameras and software. Photogrammetry may be entering an enlightened period, as users have numerous choices (cameras, lenses, and software) and many are utilizing the technology to define their surroundings; however, the key for those seeking answers will be what happens once topography is represented as a three-dimensional digital surface model. Perhaps the model can be compared with another model to visualize change, either in topography or in vegetation cover, or both. With these models of our landscape, prediction technology should be rejuvenated and/or reinvented. Over the past several decades, researchers have endeavored to capture the erosion process and transfer these observations through oral and written word. Several have hypothesized a fundamental system for gully expression in the landscape; however, this understanding has not transferred well into our prediction technology. Unlike many materials, soils often times do not behave in a predictable fashion. Which soil physical properties lend themselves to erosion process description? In most cases, several disciplines are required to visualize the erosion process and its impact on our landscape. With a small camera, the landscape becomes more accessible and this accessibility will lead to a deeper understanding and development of uncompromised erosion theory. Why? Conservation of our soil resources is inherently linked to a complete understanding of soil wasting.