عنوان فارسی مقاله:

استفاده از Lidar و GIS جهت بررسی مدیریت آب و خاک در تراز های کشاورزی کاراکول، بلیز

عنوان انگلیسی مقاله:

Using Lidar and GIS to Investigate Water and Soil Management in the Agricultural Terracing at Caracol, Belize
This analysis of terrace hydrology demonstrates two of the potential underlying principles motivating the construction of agricultural terraces by the people at Caracol. First, terraces reduced soil erosion, and second, they increased the water retention of the soil. This remains true even when analyzing the terraces over 1,000 years since their last maintenance. While previous investigation of terraces at Caracol has found that they improve the growth of modern vegetation (Hightower et al. 2014), this quantitative analysis sheds light on possible explanations for those findings. While these two factors may provide all of the necessary information to explain the importance of agricultural terraces to this ancient city, historical and social processes may share responsibility. They may explain the presence of terraces in U-shaped valleys where these indices show negligible increases in soil wetness and erosion reduction. For example, terraces may have initially been constructed in valleys and then subsequently been expanded to the slopes as indicated by (Arlen Chase, personal communication 2014; Macrae and Iannone 2011). In addition, the methods utilized for this analysis are not specific to this dataset and can be emulated with any digital elevation model data.

CONCLUSION

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