Stratigraphic assessment of Umhlatuzana Rock Shelter, South Africa

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INTRODUCTION

Umhlatuzana is an important rock shelter site for the study of the Middle and Later Stone Age in South Africa (~70,000 BP - 1,800 CE). Previous excavations (Kaplan 1990) report sediment movement. Unclear stratigraphic integrity has led to the site being underused. This is especially important for the MSA/LSA transition, which is only known from very few sites.

We initiated a high-resolution geoarchaeological study aimed at clarifying the depositional history of the archaeological assemblages.

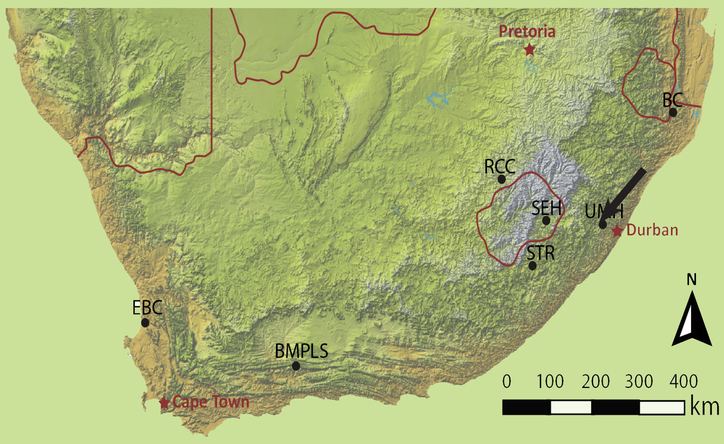

Figure 1 *Map illustrating sites with MSA-LSA sequences in South Africa. BMPL: Boomplaas Cave; BP: Border Cave; EBC: Elands Bay Cave; RCC: Rose Cottage Cave; SEH: Sehonghong rock shelter; STR: Strathalan B. rock shelter; UMH: Umhlatuzana rock shelter.*

Umhlatuzana stratigraphy

West Profile

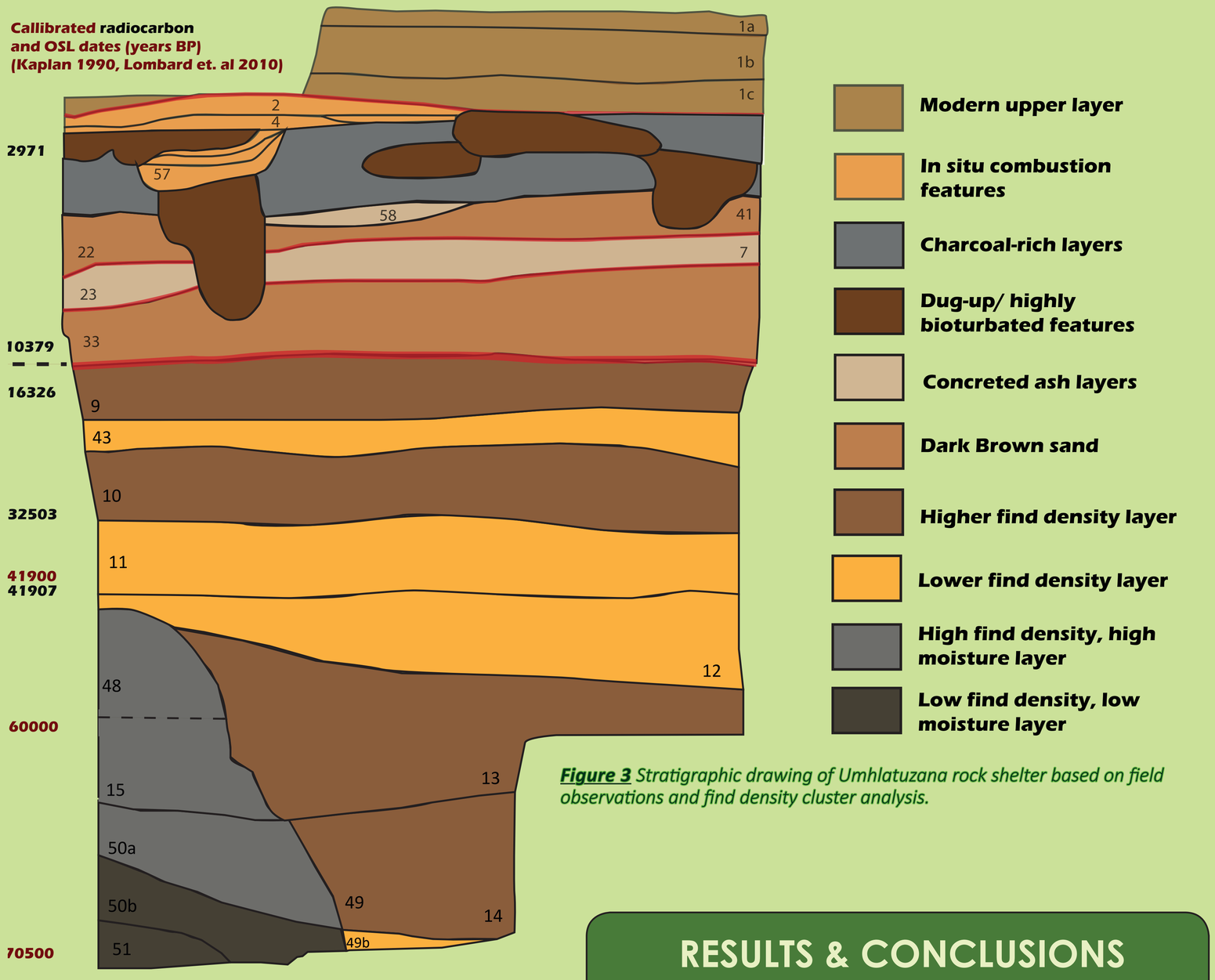

Figure 3 *Stratigraphic drawing of Umhlatuzana rock shelter based on field observations and find density cluster analysis.*

METHODS

Our stratigraphic assessment is based on a combination of field observations with geospatial, sedimentological, and geochemical analyses. Specifically, we have conducted grain-size, find distribution, pH, and Loss on Ignition analyses. Additional geoarchaeological work including micromorphological analysis is underway to address outstanding questions on the stratigraphy of the site.

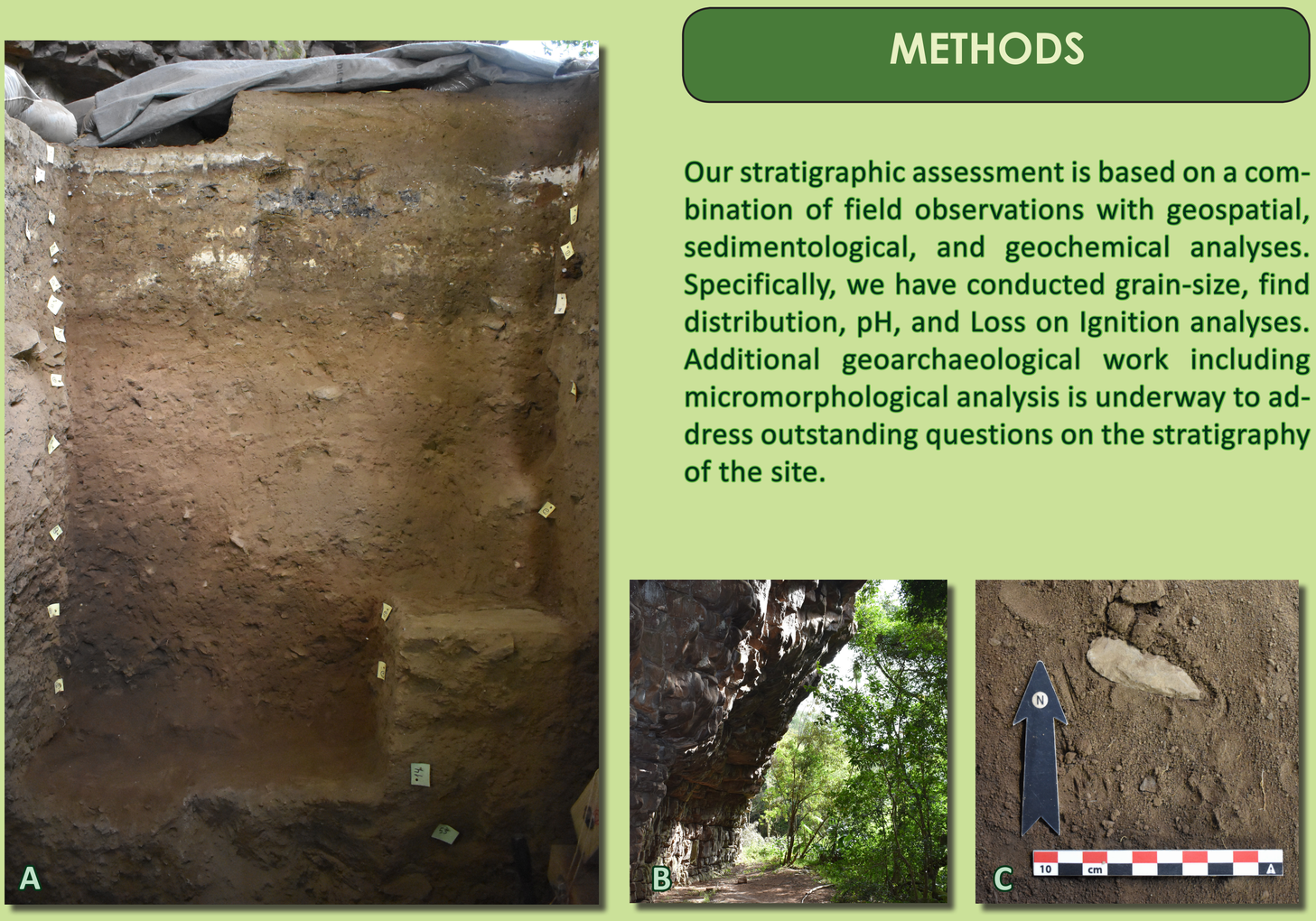

Figure 2 *A: Photo of the excavated western profile; B: Umhlatuzana rock shelter; C: In situ MSA unifacial point.*

RESULTS & CONCLUSIONS

- Continuous mechanism of sedimentation throughout the sequence
- Source material accumulated by *in-situ* weathering
- Pleistocene-Holocene hiatus consistent with patterning in pH and LoI results
- Sedimentary colour difference in Pleistocene due to hydraulics of the area resulting in high moisture units
- Current stratigraphic assessment does not support sediment movement in the sequence

Figure 4 *Particle size distribution curves for identified stratigraphic units 1b, 5, 7, 9, 10, 11, 15, 33, 48, 50. The mean grain size of the rock shelter was derived from Bell and Lindsay 1999.*

ACKNOWLEDGEMENTS

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Bell, F. G., & Lindsay, P. (1999). The petrographic and geomechanical properties of some sandstones from the Newspaper Member of the Natal Group near Durban, South Africa. Engineering Geology; Kaplan, J. (1990). The Umhlatuzana Rock Shelter sequence: 100 000 years of Stone Age history. Southern African Humanities, 2(0); Lombard, M., Wadley, L., Jacobs, Z., Mohapi, M., & Roberts, R. G. (2010). Still Bay and serrated points from Umhlatuzana Rock Shelter, Kwazulu-Natal, South Africa. Journal of Archaeological Science, 37(7), 1773–1784; . Map based on SRTM 2000, NASA/JPL/NIMA.