

https://dspace.org/

Reconstructing palaeoenvironments during the Middle Stone Age in the southern Cape, South Africa: stable isotope analysis of speleothems from the De Hoop Nature Reserve

Noah, Jane Sabina

2011-06-10
http://hdl.handle.net/10539/10083

Downloaded from a DSpace repository. https://dspace.org/

ABSTRACT

The southern Cape coast of South Africa has a rich Middle Stone Age archaeological record. Finds recovered from sites such as Blombos Cave and Pinnacle Point continue to provide unique insights into our understanding of past human lifeways in this region. Determining the effect of climate change on human behavioural developments during the Middle Stone Age occupations in the area is hampered by a paucity of high resolution terrestrial proxy records.

This study focused on reconstructing the palaeoenvironment of the southern Cape during the last 150 ka. A stable isotope record was derived from several speleothems sampled within the De Hoop Nature Reserve. The reserve is approximately 30 km east of Blombos Cave and 270 km from Cape Town. The speleothems were dated using uranium series techniques from *c.* 3.5 to 50 ka and between *c.* 100-115 ka, respectively.

The stable carbon and oxygen signals were used respectively, as vegetation and precipitation proxies. The pattern identified in the isotope record correlated winter rainfall with C_3 vegetation whereas summer rainfall was coeval with a stronger C_4/CAM vegetation component. Variations in the amount of precipitation and the vegetation composition were congruent with changes recorded in seawater temperatures, ice cores and shifts in the position of the Subtropical Convergence.

Using this stable isotope record, the intention was to link the speleothem record with the dated occupations at Blombos Cave, thereby establishing if climate change influenced human activity at the site. The implications of these results for archaeological interpretations in this region are also addressed. In addition, this study also considers the forcing mechanisms related to the De Hoop speleothem record.

WitsETD