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New Stone Age Localities Near the Knysna Heads, Western Cape, South Africa

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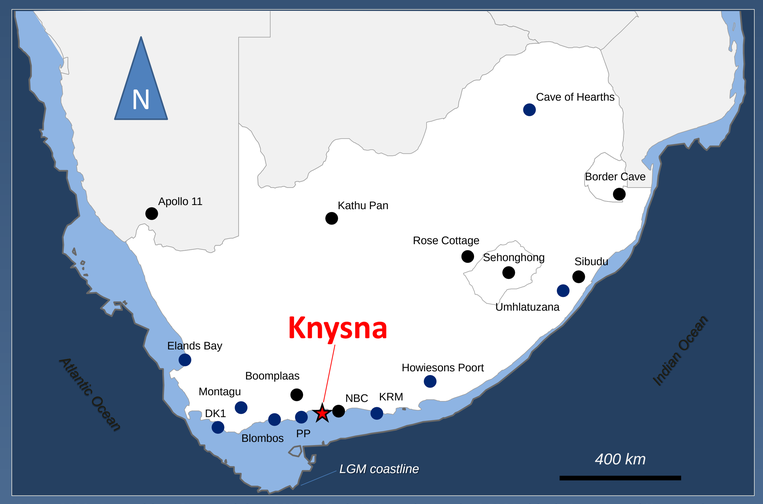


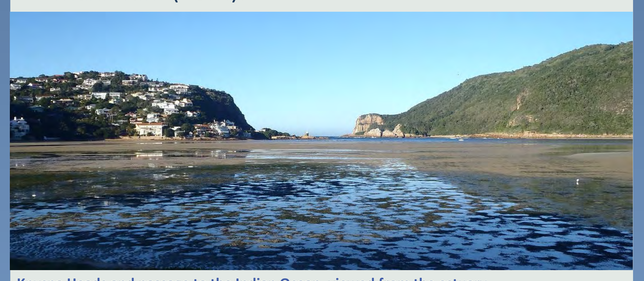
Major MSA sites in blue. Sites with late MSA or Early LSA predating the LGM in black. Location of Knysna shown.

Location of the Knysna localities described in this poster.

Sea Caves at Featherbed on the Western Head (FBC1-3).

OVERVIEW

- We report on five previously undocumented sites from Knysna, South Africa.
- These sites include Earlier Stone Age (ESA), Middle Stone Age (MSA), and Early Later Stone Age (ELSA) industries.
- The sites are located in a unique estuary-coastal ecotone.
- New AMS dates from one of these localities – KEH-1 – place it within the poorly represented period between 44 kya and the Last Glacial Maximum (LGM).



Knysna Heads and passage to the Indian Ocean, viewed from the estuary.

KNYSNA ENVIRONMENT

Knysna, located in an afromontane forest zone on the South African coast, is about 70 km east of Pinnacle Point and 40 km west of Nelson Bay Cave. Knysna estuary has the largest tidal water area of any estuary on the southern coast, and has one of the highest rates of bioproductivity of any in South Africa (Allanson 2000, Marker 2003). The basin formed during the Pliocene uplift, and has a permanent opening to the ocean through two rocky headlands (the Eastern and Western Heads). During peak glacial periods, the lagoon dried up but the river channel continued to flow out through the Heads (Marker 2003). Palynology from a nearby vlei demonstrates the stability of the afromontane vegetation zone throughout the last 40 k years (Irving 1998). Although it is not clear that the current bi-modal rainfall regime would have persisted throughout the Pleistocene, Irving's work suggests that there was high moisture availability during all periods except peak glacials.

The view into the Knysna straits from Featherbed Cave 1.

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EARLIER STONE AGE

FEATHERBED OPEN-AIR LOCALITY

Large bifaces from Featherbed ESA locality.

The Featherbed locality ESA site sits on top of the Western Head at about 200 m asl, on a stabilized dune most likely dating to the Pliocene (Marker 2003). Numerous quartzite handaxes, cleavers, and casual cores were uncovered by road and fence construction, and we estimate that the artifacts are derived from the top 2 meters of sediment. Our surveys obtained a preliminary estimate of the distribution of these artifacts, but much of the site is still covered by vegetation and dune sands. An exposed quartzite outcrop is located just a few hundred meters from where the handaxes were found.

MIDDLE STONE AGE

FEATHERBED SEA CAVES 1 & 3

Quartzite blade and point from FBC 1.

Three caves, Featherbed Caves (FBC) 1, 2, and 3, are located at the base of the Western Head facing into the Knysna strait. Within FBC-1 and FBC-3, archaeological materials, including hearths and artifacts, are preserved in or below partially cemented sediments. Lithic artifacts are diagnostic of the MSA.

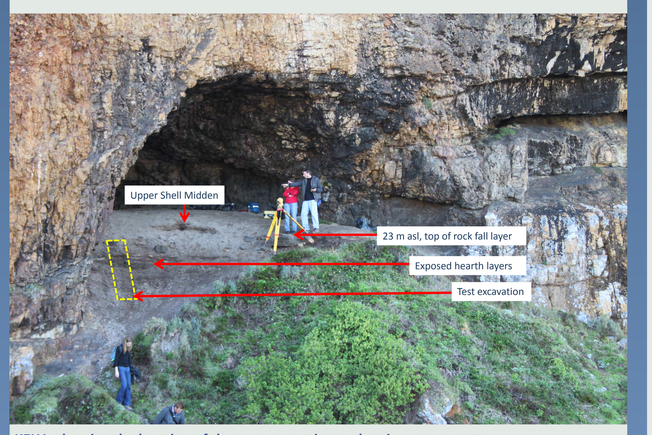
KNYSNA EASTERN HEADS CAVE 2 (KEH-2)

KEH2, a cave just below and to the east of KEH1, includes a smaller archaeological deposit with a dense accumulation of MSA lithics. This site was surveyed, but has not yet been excavated.

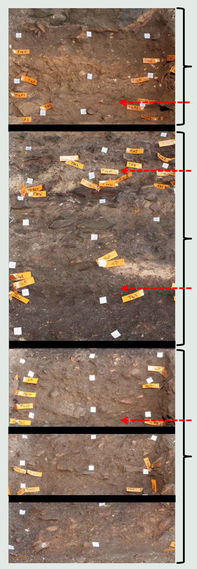
Large points from KEH-2.

MIDDLE STONE AGE TO EARLY LATER STONE AGE

KNYSNA EASTERN HEADS CAVE 1 (KEH-1)



KEH1, showing the location of the test excavation and major components.



Stratigraphy of KEH1 with major aggregation units. Black bands on photo indicate a step in the excavation. Dates are AMS calibrated using CalPal 2007 HULU.

The thick archaeological deposit in KEH1 includes two distinct components: an upper shell midden (most likely dating to the Holocene LSA) and a thick lower non-shelly deposit. The two are separated by a large rockfall layer, the top of which is 23 m asl. The lower component includes an exposed sequence of hearth features. Our research focused on this lower component.

We excavated a 2 x 0.5 m strip into the erosional slope at the cave mouth. In excavating twenty-eight stratigraphic units, we identified three distinct aggregations, OBS, DHA, and DBS.

Aggregation Units:
- OBS - Orange Brown Sandy
- DHA - Dense Hearth Aggregate
- DBS - Dark Brown Spally

Finds:
- Quartzite, quartz, and silcrete lithics
- Small flakes and bladelets
- An endscraper
- Ostrich egg shell
- Ochre
- Marine shell
- Charcoal
- Microfauna
- Large fauna (equid and size 4 bovid)

Excavations at KEH-1.

Silcrete bladelet from OBS aggregate.

DISCUSSION

The Knysna estuary has been a focal point for human activity at least since the mid-Pleistocene, and thus offers a potentially valuable long-sequence landscape-use perspective within a small, well-defined area. The multiple sites identified around the Heads would have provided distinctly different advantages, and give us a useful means to assess the strategic choices of Stone Age foragers. From the Featherbed caves, these foragers would have had a limited view of the landscape. During low sea stands, these sites would have looked out on a narrow river running from the Knysna basin in the north, to a wide coastal plain in the south. This choke-point in the landscape would have been a logical path for any potential prey animals moving between these zones. During high sea stands, the Featherbed caves would have had direct access to marine, estuary, and terrestrial resources. By contrast, the Eastern Heads caves offered an excellent view of the wide coastal plain to the south during low sea stands, and direct access to marine resources, without being too far from the estuary, during high sea stands.

Research at Knysna will also provide new data on the poorly understood period from 40 kya to the LGM. The sequence at KEH-1 will provide a critical point of comparison with other sites of this period (see map in upper left).

CURRENT RESEARCH PRIORITIES

1. Document the material culture, environment, and microstratigraphic processes of the ELSA at KEH-1. For this we will need to expand our test excavation, particularly in the DHA.
2. Investigate and document the MSA at FBC-1 and FBC-3. This will require initial test excavations and dating (AMS and OSL).
3. Date and determine the stratigraphic integrity of the earlier MSA site at KEH-2. This will require test excavation and OSL dating.
4. Delineate the ESA site at the top of Featherbed through a program of shovel testing.

View of KEH-1 (upper left) and KEH-2 (lower right) from south.

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