

## ZIMBABWE

### Preliminary Results of Archaeological Excavations in Impala and Ngabaa Rockshelters, Hwange National Park, Zimbabwe

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#### Introduction

In June to August of 2008 doctoral students and faculty from the University of Nevada, Reno (UNR) and Simon Makuvaza of the National Museum and Monuments of Zimbabwe (NMMZ), excavated in Impala and Ngabaa rockshelters (Figure 1) as part of an ongoing study of prehistoric landscape use and paleoenvironmental conditions in Hwange National Park during the past 250,000 years.

A few kilometers to the west of the rockshelters is the famous archaeological site Bumbusi Ruins, an Iron Age settlement with stone walling and housing platforms, and another site called Bumbusi Cave, a largely Late Stone Age rockshelter that was test-excavated in 1947 by the National Museums of Southern Rhodesia. Unlike Bumbusi Cave and the Iron Age Ruins, both of which are located on the gently sloping valley floor, Impala and Ngabaa Shelters are near the crest of a prominent ridge that slopes very steeply to the east. The ridge is capped by Upper Karoo Sandstone formations weathered along ancient bedding planes to produce many rock overhangs and shelters. The formations contain abundant archaeological material that ranges from Iron Age stone walling and artificially-leveled housing platforms, daga, ceramics, and rudimentary rock engravings and paintings (e.g. a tsoro board) to Later Stone Age (LSA) microlithic assemblages and fine engravings of animal spoor.

The walls of Impala and Ngabaa Shelters are partly covered with unique and exceptionally accurate engravings of animal spoor along with some paintings and abstract incisions. Test excavations in 2007 by Gary Haynes (UNR) and Simon Makuvaza (NMMZ) into Impala Shelter exposed both Late Stone Age materials and Iron Age ceramics, indicating that

these shelters may provide evidence about the transition from LSA hunting-gathering to Iron Age agropastoralism in northwestern Zimbabwe.

#### Excavations

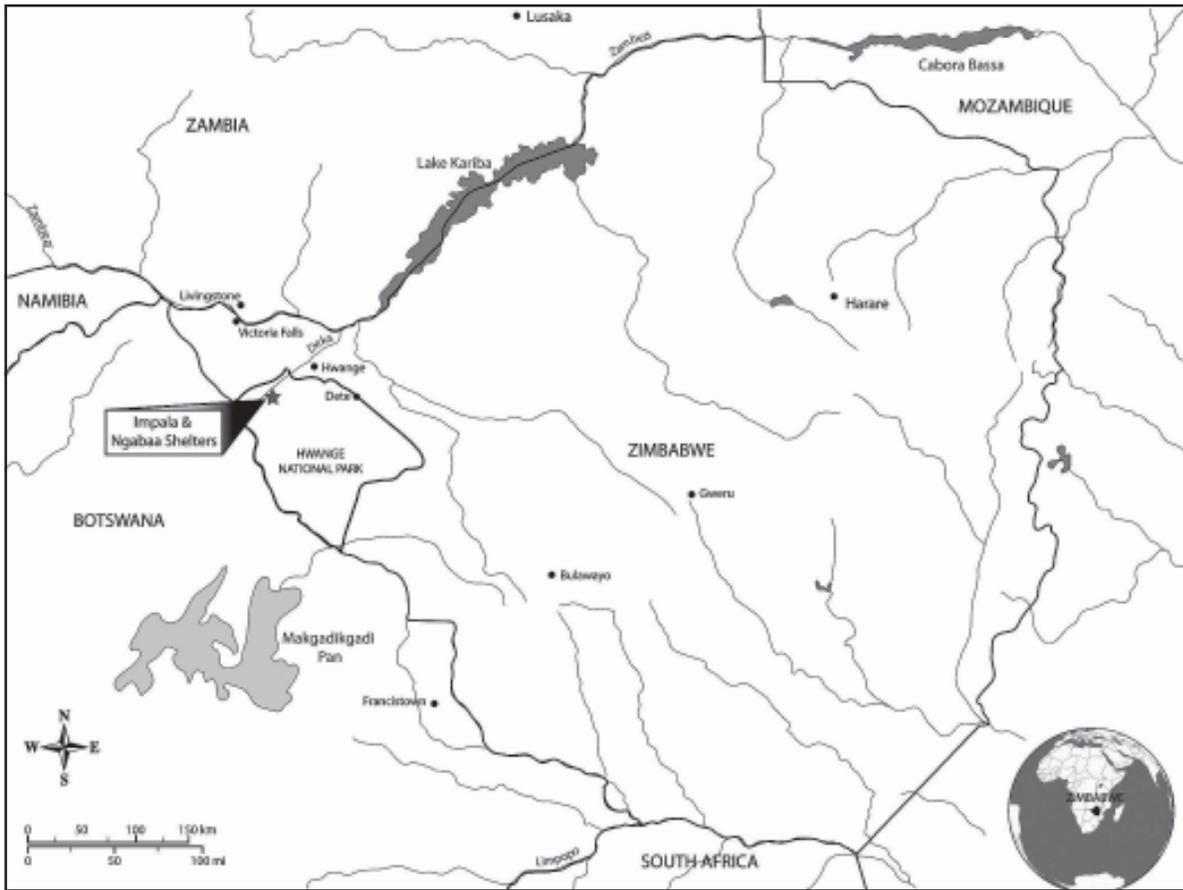
One m<sup>2</sup> gridlines were established in Impala and Ngabaa Shelters based on compass bearings. Excavation in 50 cm by 50 cm quads and by 5-cm levels was carried out using hand tools. All excavated material was screened through either 1 and 3 mm nested sieves or 2 and 4 mm nested sieves. In this way, six 1 m by 1 m units were excavated (generally to bedrock) in Impala Shelter, for a total excavated volume of 5.025 m<sup>3</sup>. In Ngabaa Shelter, a single unit was excavated to bedrock for a total excavated volume of 0.78 m<sup>3</sup>. An additional unit was placed in an open area between the shelters to test for the presence of cultural material. A total of 1.7 m<sup>3</sup> were excavated from this test unit, which yielded few artifacts.

The sheer abundance of cultural material excavated from Impala and Ngabaa Shelters hindered accurate field cataloging of artifact counts and classification by type; however, best estimates were made based on artifact size and quantity. Bags were weighed using a field scale with a 0.1 to 500 gram range. Many of the bags exceeded this range, being recorded as 500+ grams. Therefore, we anticipate that further analysis will provide greater measures of artifact weights.

Despite these field limitations, it is clear that a significant amount of cultural material is preserved in the deposits of Impala and Ngabaa Shelters, with an estimated 142,344 artifacts and ecofacts weighing over 119 kilograms recovered from just under six m<sup>3</sup> of excavated sediment (Tables 1 and 2).

Artifact types are dominated by microlithics, including many backed crescents and thumbnail scrapers characteristic of the post-classic Wilton Technological Complex. Preliminary analysis suggests a very high tool-to-debitage ratio, although this is not reflected in the field catalog numbers due to many small tools being lumped into the lithics bags during screening. Cryptocrystalline silicate (CCS) is the most common material type and is locally available as outcrops of petrified wood. Quartz and quartzite are also represented and locally available in small rounded nodules.

Figure 1: Location of Impala and Ngabaa shelters.



Abundant animal bone was also recovered, containing examples of zebra, impala, tortoise, several rodents, and multiple taxa of reptiles, among other unidentified taxa. Numerous ostrich eggshell (OES) beads were recovered in various stages of production and finish. Unfinished beads coupled with grooved abrading stones indicate that OES beads were manufactured on-site. Other types of groundstone include expedient millings, formal handstones, pestles, and a palette, which may have been used for processing paint or medicine. Ceramics were generally limited to near-surface contexts and include graphite-burnished wares, decorated rims, a comb stamped specimen, and plainwares. Various types of ochre (although some termite concretions confuse this category), a few pieces of graphite, and a blue-colored “rock” suggest painting activities, possibly of the rock engravings and art. Charred nutshells of mungongo (*Schinziophyton rautanenii*), uncharred nutshells of *Commiphora* sp.

(possibly the poison grub tree *Commiphora africana*), seeds of cf. *Acacia*, various pieces of wood, and shell fragments from mollusks (cf. *Achatina*, giant land snail, and cf. *Unio*, freshwater mussel) have been tentatively identified from the many organic remains found. Many of these materials, especially the mungongo nutshells and cut-marked animal bone fragments, are likely to be food residue. Charcoal was plentiful and several samples are being analyzed for taxon identification. One charred wood fragment directly dated to 3610 BP is most likely mopane (*Colophospermum mopane*) (L. Allott, personal communication 2009).

In addition to the plethora of artifacts, over a dozen hearth or charcoal ash features were also recorded. Feature fill was collected for complete analysis. Charred mungongo nutshells were noted in many of these features along with charred bone, dense lithic concentrations, and various types of wood, nutshells, and seeds.

**Table 1:** Impala Shelter artifacts by type.

Artifact Type	Approx. Weight (gms)	Estimated Count
Beads	235	624
Ceramics	792	234
Abraders	211	5
Handstones	852	5
Millingstones	1,462	3
Palette	86	1
Groundstone	7,746	3
Lithics	69,390	81,787
Cores	4,767	47
Flake Tools	88	2
Lithic Tools	282	6
Bone Tools	22	14
Bone & Ecofacts	14,975	37,625
Ochre/Graphite	82	45
<i>Total</i>	<i>100,989</i>	<i>120,401</i>
Total Excavated Volume	5.025 m <sup>3</sup>	

One extremely fragile fetal burial was excavated, but the bone could not be well-conserved in the field. The shape of recovered central incisor enamel caps strongly suggests it is a primate. The fetus may have been human, given that it was associated with a concentration of lithic flakes and would have required deliberate burial for preservation.

Of particular interest, two sandstone fragments with animal spoor carvings were discovered amongst the rockfall (one resting upside down) along with one large tabular sandstone slab with engravings of warthog and impala spoor. These engravings were buried under 10 cms of sediment and ash and immediately above charred mungongo nuts dated to 3,000

**Table 2:** Ngabaa Shelter artifacts by type.

Artifact Type	Approx. Weight (gms)	Estimated Count
Beads	66	41
Ceramics	549	119
Groundstone	174	2
Pestle	115	1
Lithics	12,917	12,710
Cores	406	4
Flake Tools	17	1
Lithic Tools	433	3
Bone & Ecofacts	3,550	9,061
Ochre/Graphite	2	1
<i>Total</i>	<i>18,228</i>	<i>21,943</i>
Total Excavated Volume	0.78 m <sup>3</sup>	

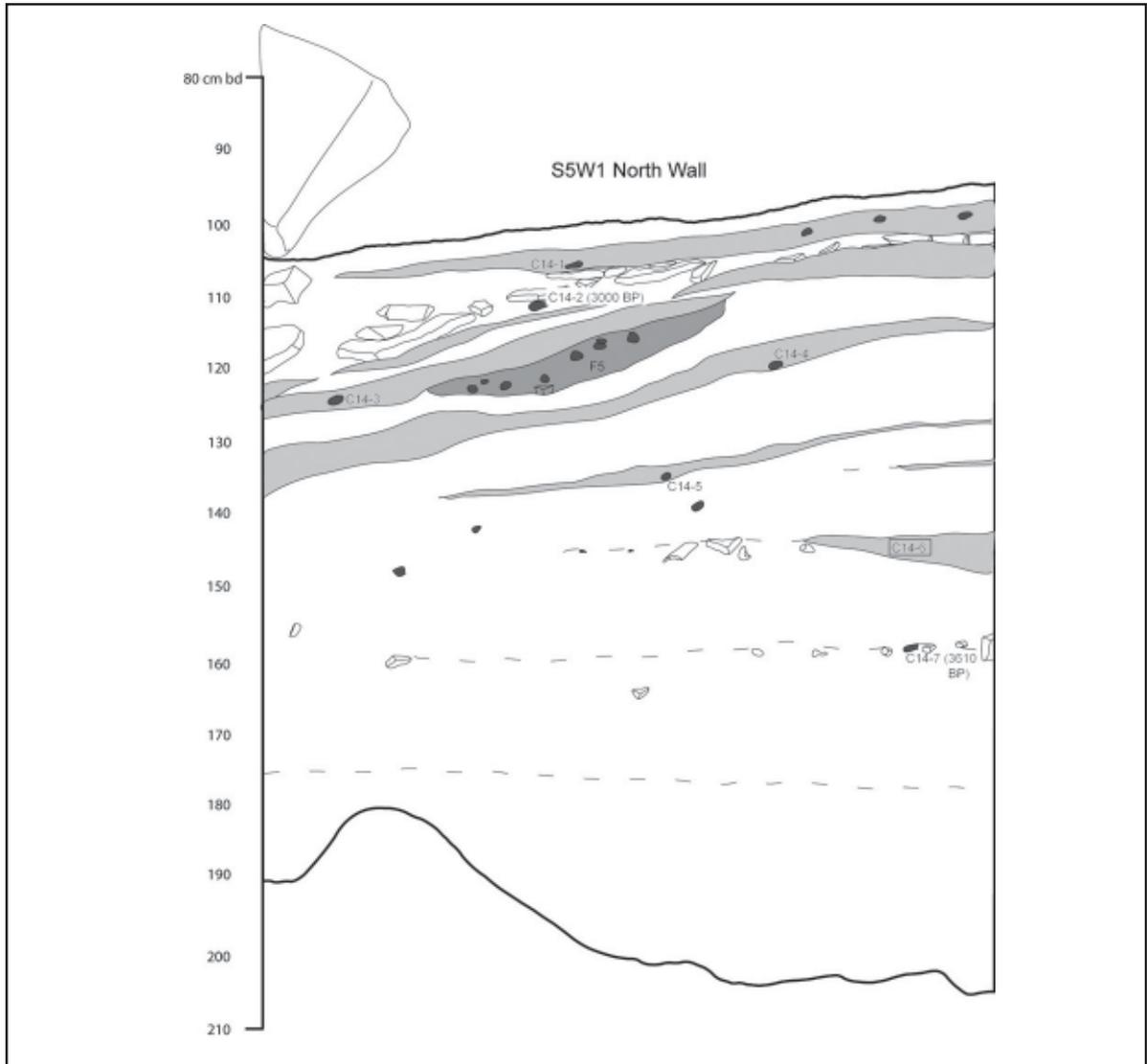
BP (Table 3; Figure 2). Future assays should provide a minimum date for their creation.

A mopane charcoal fragment from 159 cmbd (approximately 65 cmbs) was assayed to 3610 BP (Table 3; Figure 2) and is associated with a living surface characterized by an increase in artifacts and a stratigraphic boundary with relatively large cores of the local petrified wood. The two bracketing radiocarbon assays suggest that the bulk of the rockshelter fill was deposited between 3000 and 3610 BP. A previously obtained date from the test excavations on wood charcoal pulled from the screen and excavated from approximately 50 cmbs was assayed to 2310 BP. This sample was from outside the protective rockfall cap and makes apparent the need for further dating

of cultural material (particularly modified bone and OES beads). Assayable material is abundant and further dating of the archaeological assemblage will better define the temporal span of human occupation in the rockshelters.

Stratigraphic integrity beneath the rockfall layer is excellent, with preserved ash lenses, features, and living surfaces (Figure 2). Sediment is generally fine sandy loam and predominately of aeolian origin, but with occasional alluvial slopewash contributions. Near the bedrock, a poorly-consolidated coarse-grained sandstone with frequent round quartz gravels, termite disturbance increases. In units outside of the protective rockfall layer and near the dripline, bioturbation is evident with many roots, rootlets, and

**Figure 2:** Stratigraphic profile of S5W1 north wall.



animal and insect burrows. Modern elephant dung boluses suggest that trampling and disturbance by elephants (and other large animals) have negatively impacted spatial integrity along the dripline and upper apron of Impala Rockshelter.

A flotation column sample was collected from the northeastern corner of S5W1 in Impala Shelter and will provide additional information on sediment characteristics and any changes in flora and fauna through time. Sediment samples were also collected from each stratum for further characterization.

### Conclusion

Archaeological excavations of Impala and Ngabaa Shelters in Hwange National Park have proven fruitful. Late Stone Age occupations during the late Holocene (specifically between 3,000 and 3610 BP) are represented by a dense artifact assemblage, charcoal ash features, and food debris. Iron Age materials (e.g. ceramics) are also present but generally limited to near-surface contexts.

Ongoing analysis of the excavated material,

**Table 3:** Impala Shelter radiocarbon dates.

Unit	Provenience	Material	Beta-Analytic Lab Number	Measured Age	Conventional Age	2-sigma Calibration
S5W1	113 cmbd (~10 cmbs)	Charred Mungongo Nut	249591	3020 +/- 40 BP	3000 +/- 40 BP	Cal BP 3330 to 3070
S5W1	159 cmbd (~65 cmbs)	Charred Wood (mopane)	249590	3590 +/- 40BP	3610 +/- 40BP	Cal BP 3990 to 3830
Test Unit 1 (~S2.5W 2.5)	~50 cmbs (found in screen)	Charred Wood (unident.)	231382	2310 +/- 40BP	2310 +/- 40BP	Cal BP 2360 to 2310 and 2230 to 2200

coupled with paleoenvironmental studies currently underway by the authors, will benefit our understanding of how LSA peoples lived just before the introduction of agropastoralism and provide information as to how and when the transition from hunting-gathering to agropastoralism occurred in this region.

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