

## ■ ZIMBABWE

### Middle Stone Age Evidence from Hwange National Park, Northwestern Zimbabwe

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## Introduction

In this paper we summarize archaeological findings related to the evolution of hominin behavior in northwestern Zimbabwe. We report specifically on the Middle Stone Age (MSA) in Hwange National Park, a protected area of more than 14,600 square kilometers in Zimbabwe (Figure 1). None of the National Park's sites provide a diachronic view of evolving technology and subsistence, and therefore a division of northwestern Zimbabwe's MSA into separate phases, stages, or industries is not attempted here. Nevertheless, even in the absence of stratified sites, we think there were long-term cycles of stability and change in tool forms and technology. Different phases may have lasted for tens of millennia without major changes, as elsewhere. We do not well understand the MSA's sequential-stratigraphic developments, but we think the occurrence of this formative technological stage and its variability is worth reporting.

## General Observations about the MSA in Zimbabwe

The MSA is not well described in Zimbabwe, although perhaps enough sites and collections exist to allow a better understanding when further analyses are completed (see Larsson 2005, 2007). A serious hindrance to arriving at a clearer picture of the MSA, in addition to the economic and political disarray in Zimbabwe, is the scarcity of stratified sites

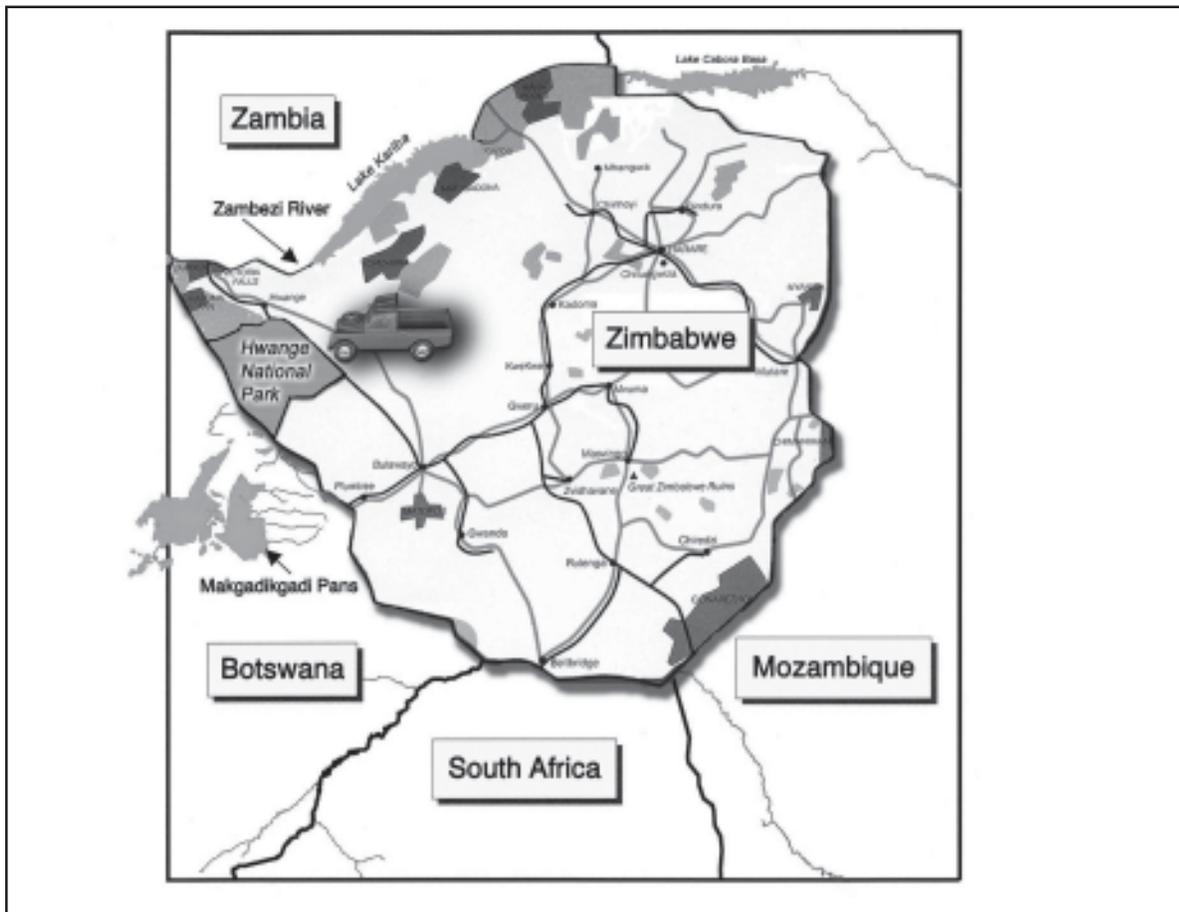
(although see Larsson 1996, 2007; Walker 1995) and the lack of detail about paleoenvironments that would provide context for excavated assemblages.

Northwestern Zimbabwe has the same limitations on its archaeological record as much of the rest of southern Africa. It is a notable fact that coastal cave sites in South Africa, such as Klasies River Mouth, Border Cave, Die Kelders Cave, and Blombos, provide rich evidence for the emergence of modern humans using new technologies and practicing symbolic behavior and advanced hunting techniques, while on the other hand open-air MSA sites have not yielded the same richness of evidence for human evolutionary transitions. In Zimbabwe, the Matobo Hills cave sites (they are actually rockshelters without the dark zones found in true caves) are considered to be the most important in the country in terms of evidence about the MSA and LSA, yet they lack fine chronostratigraphic controls and paleoenvironmental detail. Although the relatively simpler materials from the far interior open-air sites, such as are reported here, may seem depauperate when compared to the coastal cave sites and rockshelters, their inventories may be comparable to those from the numerous other interior open-air sites elsewhere in the southern end of Africa.

The origins of MSA technology and behavior and their duration are still uncertain in Zimbabwe. The MSA in Zimbabwe, as elsewhere in southern Africa, is considered to include a wide typological and technological variety of assemblages, all of which contain faceted-platform flakes, flake-tools, and convergent flakes, often retouched as scrapers or points (Sampson 1974; Thackeray 1992; Volman 1984). MSA assemblages also contain technological features that are present in the later Early Stone Age (ESA), such as prepared cores.

Like the ESA, the MSA in southern Africa apparently lasted through oscillating conditions that were sometimes warmer and cooler, and at other times wetter and drier, indicating great hominin behavioral flexibility even when toolkits did not radically change. MSA hominins in Hwange National Park presumably were a pre-modern *Homo* species, as elsewhere in Africa and Eurasia, and their behavior was similar in some ways to that of modern humans but very different in other ways (Stiner 1993; Stiner and Kuhn 1992).

**Figure 1:** Location map; Hwange National Park is in the northwest of Zimbabwe. Its northern reaches are within 100 km of the Zambezi River.



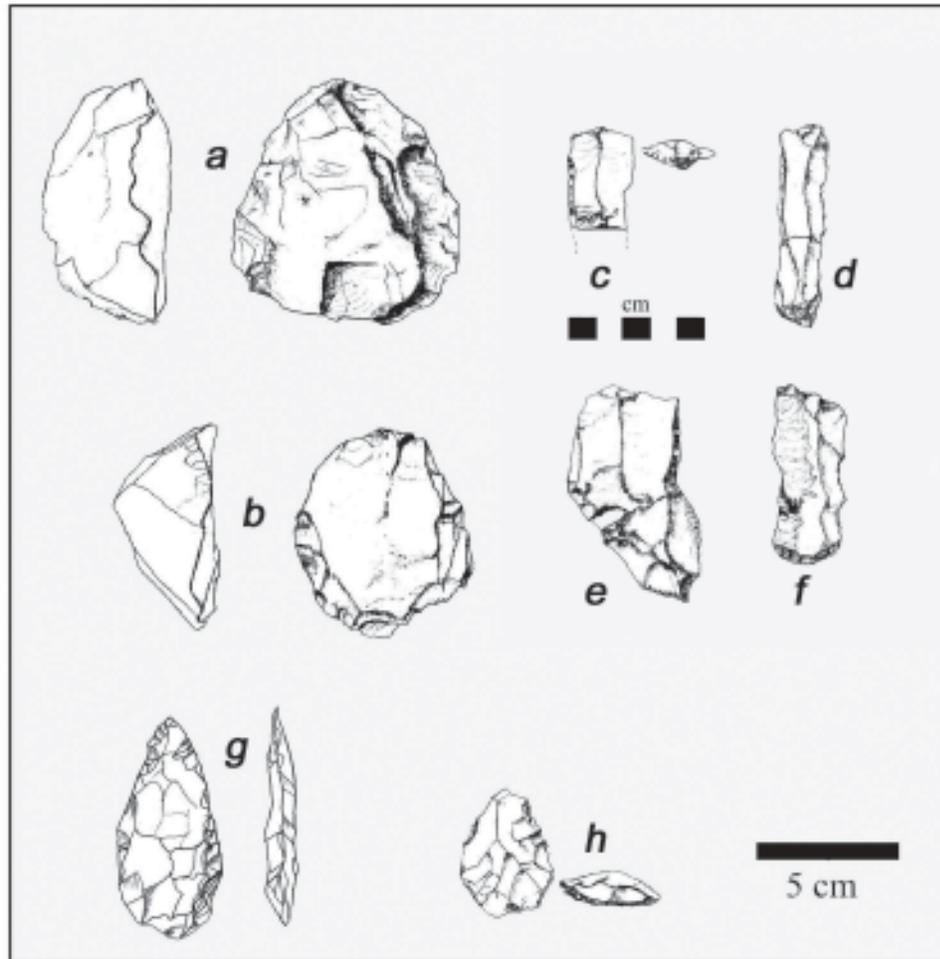
**Possible Time-Related Variability in Zimbabwe’s MSA**

In Zimbabwe the typical MSA assemblage is termed Bambata industry (Armstrong 1931; Cooke 1963; Cooke et al. 1966; Walker 1990), referring to post-Acheulian associations of trimmed points, side scrapers, circular scrapers, borers, and occasional examples of groundstone (see Sampson 1974:189-191). Thin bifacial points also co-occur in some Hwange sites (Figure 2g), and these are considered analogous in form and function to the bifaces found in other MSA phases such as Stillbay in South Africa. Hwange National Park’s Bambata industry, like Stillbay (see Sampson 1974 for reservations about this term, which has been mainly applied in the Cape province of South Africa), includes relatively thick

prepared cores (Figures 2a and b), blades or flake-blades (Figures 2c, d, e, f), and bifacial as well as unifacial retouched points (Figures 2g and h).

In most locales in Zimbabwe the MSA components do not clearly and directly underlie LSA components, and in the few sites where they do, they are usually separated by disconformities. Thus, transitional or transformational phases at the very end of the MSA have not been reliably identified. “Tshangula” is the term sometimes assigned to what appear to be transitional MSA-LSA industries in Zimbabwe thought to date later than about 35,000 BP (Volman 1984; Walker 1990). Walker (1990) has suggested that the original definition of such a transitional technology was based on mixed assemblages, and therefore he preferred not to predict the presence of any transitional industries in Zimbabwe. The

**Figure 2:** MSA artifacts from Hwange National Park: two prepared cores, each in two views (a and b); four blades/flake-blades (c, d, e, f); a thin biface (g); and a bifacially retouched point made from a Levallois flake (h).



Matobo Hills' earliest LSA collections (dated to about 13,000 BP) contain a few remnant MSA traits (Walker 1990:208) perhaps indicating that hominins did not wholly abandon all of Zimbabwe before, during, and just after the Last Glacial Maximum, but instead maintained a presence in the Zambezi River drainage area. In eastern Zimbabwe the post-MSA terminal Pleistocene assemblages are similar in some ways to the "Nachikufan" industry of eastern Zambia (Sampson 1974:353-360) and the "Robberg" of eastern South Africa, containing microliths and many backed bladelets (Walker and Wadley 1984) and dating 22,000-14,000 BP, but western Zimbabwe (and Hwange National Park in particular) appear to lack assemblages of this age and character, indicating either that hominins were not present around this time,

or if they were present they continued using the earlier MSA technology. If hominins were not present in western Zimbabwe 22,000-14,000 BP, one implication may be that modern *Homo sapiens* entered the area only following the LGM after microlithic technology was developed, the bow and arrow were adopted, and other items such as digging-stick weights were introduced to assist populations in adjusting to drier and less productive Holocene habitats.

The term "Magosian" seems to have been abandoned in Zimbabwean archaeology. It was originally applied (Cooke 1957, 1963, 1967) to refer to a dry-period industry with microliths, core-scrapers, bone tools, ostrich eggshell (OES), groundstone, backed faceted-platform points struck from relatively

small disc cores, and trimmed points, and thought to be terminal Pleistocene. The term may have been assigned to mixed and unprovenienced assemblages.

### The MSA in Zimbabwe's Hwange National Park

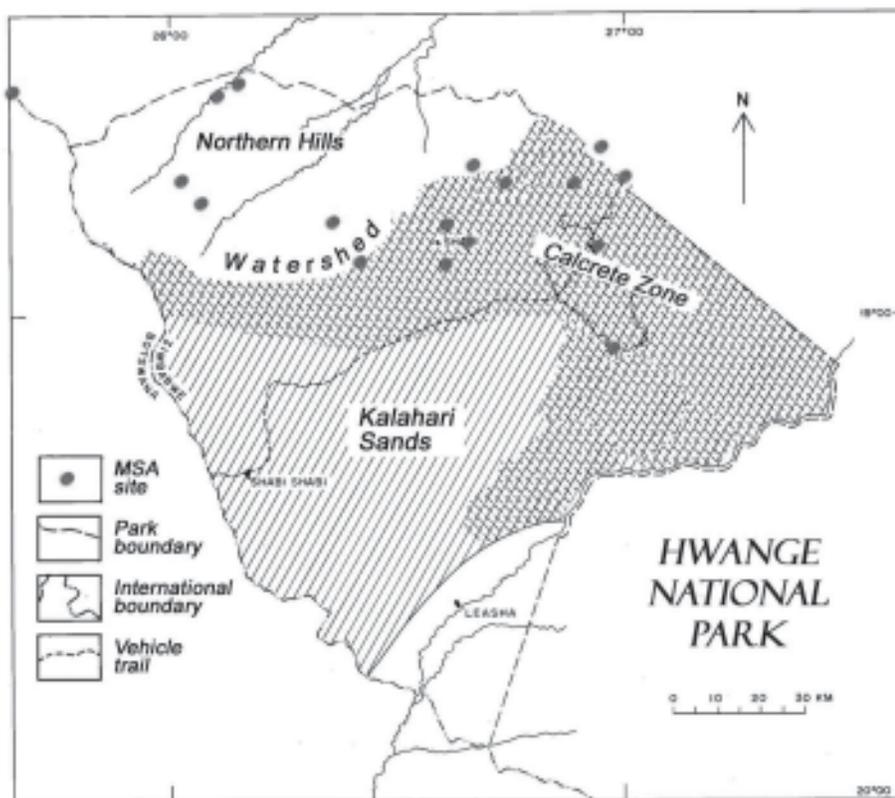
As shown in Figure 1, Hwange National Park is located in the northwestern part of Zimbabwe. The Park contains a mosaic of different habitats, vegetational communities, and ecozones (see, for example, Rogers 1993; Thomas and Shaw 1991), including miombo woodlands, scrub woodlands, Kalahari savanna, and Zambesi teak woodlands. Although about 200 km of walking surveys and transects have allowed us to examine only a small fraction of the total land area in the National Park, we think we have validly identified patterns of site distribution and lithic technological trends.

Hwange's MSA is represented at more localities than the ESA, mainly in a 30 km wide arc through

the Park's north (Figure 3) (Haynes and Klimowicz 1998; Klimowicz and Haynes 1996). In the final section of this paper below we compare the archaeological characteristics of all stone age phases (ESA, MSA, and LSA) in Hwange National Park.

Some materials have been found eroding out of dried lake bottoms and colluvial deposits subjected to deflation. So far we know of the MSA assemblages as open-air surficial clusters or scatters, but test excavations at a few sites indicate that 60 to 100 cm below the surface more lithic materials can be found, although we do not yet know if such deposits are undisturbed. The most abundant materials come from calcrete duricrusts (consolidated limestone horizons), some of which contain snailshells suggesting they formed in standing water (Lockett 1979). Some of these massive calcrete beds embed large stone blades with multifaceted striking platforms, as well as points, scrapers, cores, hammerstones, and in one locality mammalian teeth, horncores, and OES fragments.

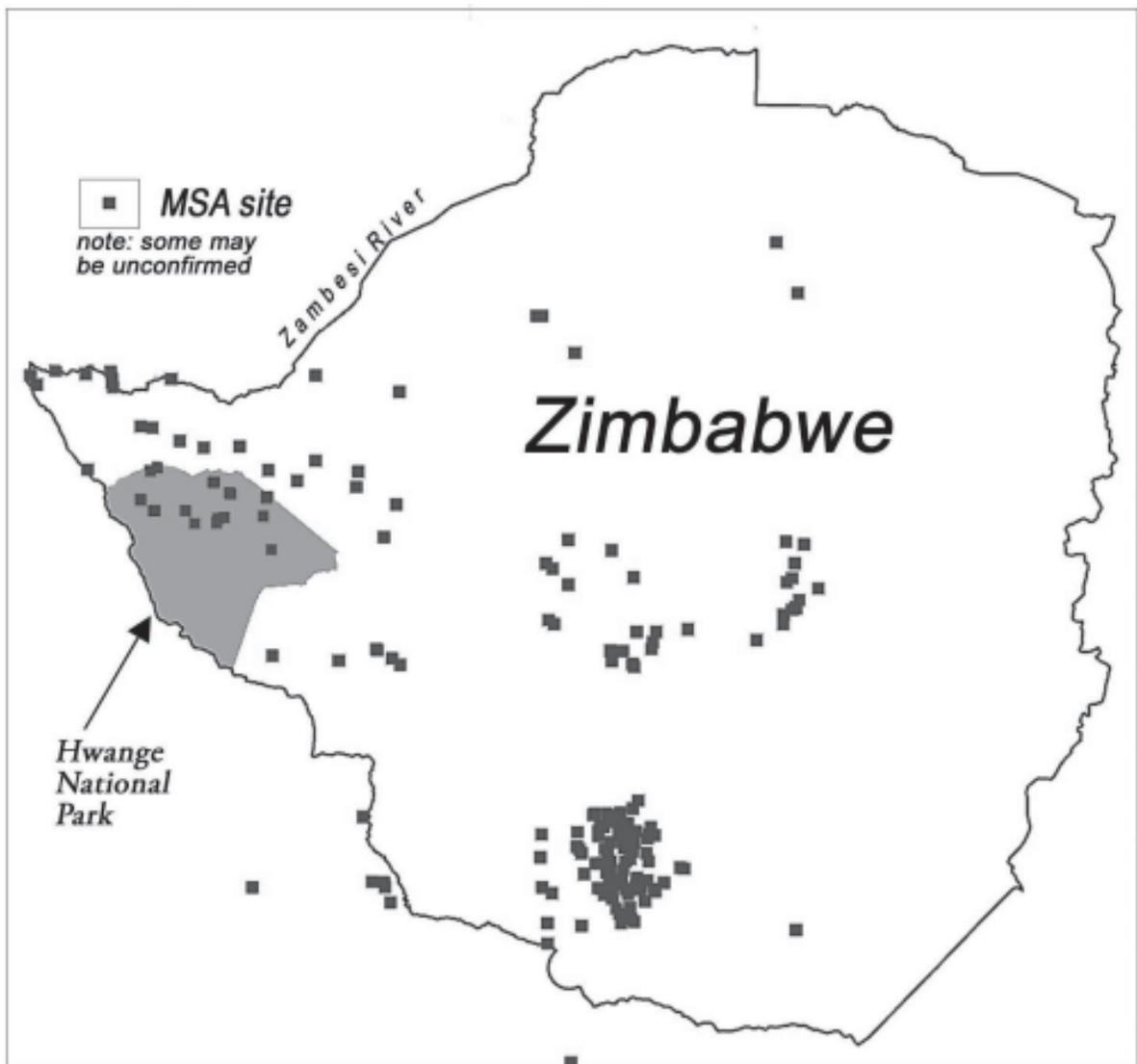
**Figure 3:** MSA site distribution in Hwange National Park, showing the main zones of the Park, "Northern Hills," "Kalahari Sands," and "Calcrete," which is a subzone of the Kalahari Sands. The divide between drainage southwest to Makgadikgadi Depression and north to the Zambesi River is marked "Watershed."



**Table 1:** Fauna recovered from the Main Camp calcrete barrow pit.

<p>cf. <i>Aepyceros</i> sp. (impala)          cf. Alcelaphine (?<i>Connochaetes</i> sp.)          cf. <i>Redunca</i> sp. (reedbuck)          cf. <i>Struthio</i> sp. (ostrich) (eggshell)          cf. Proboscidea (?<i>Loxodonta</i> sp.) (tusk fragments)</p>
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**Figure 4:** MSA sites that have been reported or recorded in Zimbabwe; some are unconfirmed or unverified.



There are no known hominin bones and teeth dating to the middle Pleistocene, although we now know that Pleistocene fossil deposits are not uncommon in certain sediments within the previously-thought sterile zone of Zambesia, and we believe that it is only a matter of time before fossil hominin bones are found. It is possible that the hominins responsible for making the MSA implements in Hwange were *Homo heidelbergensis* (formerly *rhodesiensis*), dating before 200 ka, or perhaps an early form of *H. sapiens*, dating after 200 ka.

There are numerous small MSA lithic scatters throughout the northern half of the study area, some in locales with unique associations of landscape features, substrates, and vegetational communities, and some in patterned locales where LSA and/or ESA also can be found.

No artifacts in the MSA sites appear to be art, decorative items, or overtly symbolic objects. There are no bone implements or indeed any items made of organic material, because of the surficial nature of the sites and consequently poor preservational potential. So far we have found one site (White Hills pan) that contains evidence of the use of a pigment, namely hematite found as a nodule associated with an assemblage that may be Tshangula, which as mentioned above is either a transitional late MSA phase or a mix of MSA and LSA components.

Subsurface calcrete deposits in the National Park's northeastern sector were historically mined for surfacing tourist roads, and several barrow pits contain fossil bones and associated MSA and occasional ESA lithic implements. Ostrich eggshell from one site – the Main Camp calcrete barrow pit — has been subjected to amino-acid racemization tests which suggest a date of about 100 ka (A. Brooks pers. comm. 1984). This date may also pertain to stratigraphically associated MSA lithics, namely triangular flakes with multifaceted striking platforms and blades and blade fragments. The faunal associates recovered from the site (Table 1) are wooded-savannah types and all are relatively water-dependent. Further exploration, sampling, and analyses need to be carried out to determine if the environmental setting was very different at 100 ka. We cannot make statements about MSA hominin hunting tactics, although ambush hunting at water sources seems a possibility. The bones and teeth are fragmentary and the sample is very small.

Other Zimbabwean sites that have yielded MSA assemblages and associated faunas are Chelmer Spruit (Bond and Summers 1951), Khami Waterworks (Cooke 1957), and Redcliff Cave near Gweru (Brain 1969; Brain and Cooke 1967). If they represent human prey, the animals in these sites, as at Hwange's Main Camp site, indicate MSA people in western Zimbabwe targeted open savanna medium- and large-game species (Bond and Summers 1951; Cooke 1963). Numerous other MSA sites have been reported in Zimbabwe (Figure 4), most lacking any evidence of fauna.

The latest MSA industry (possibly Tshangula) is present in a geographically wide assortment of sites in Zimbabwe, but materials and total site numbers are relatively scarce overall. The proportion of different cores (more thin discs and fewer tortoise-backs) may be distinct from the proportion in the presumed earlier MSA assemblages, but sample sizes must be expanded to be certain of significant patterned difference. If there is a Tshangula phase in the Hwange National Park study area, and if it is indeed transitional from earlier MSA assemblages containing larger prepared cores, retouched points and scrapers, and a few bifaces, it is still very distinct from LSA inventories of smaller flake-blades, retouched scrapers and geometric microliths, and smaller cores. Late Holocene LSA assemblages have been excavated and dated from rockshelters in Hwange National Park

### Comparisons of All Stone Age Phases in Hwange National Park

Over 100 sites have been found in Hwange National Park, of which 35 are confidently assigned as primarily belonging to at least one identifiable stone-age phase (ESA, MSA, LSA). The rest contain artifacts that are ambiguous, such as simple flakes or fragments of cores that could be from any of the stone-age stages. We note that these numbers are not final counts, and certainly will change as more survey and analytical work is carried out. At present, and for preliminary comparison, we also provide a simple analysis of 452 confirmed archaeological sites in all of Zimbabwe recorded by the Archaeological Survey of Zimbabwe as having identified stone-age phases. This is a partial sample, but one for which the data are most reliable.

Almost one-half of the Hwange sites are LSA only; in other words, the other half of the recorded sites contain artifacts assignable to more than one stage. For comparison, about one-fifth of the national sites are exclusively LSA. Almost one-third of the Hwange sites contain both LSA and MSA artifacts; some of these may be Tshangula and others may contain temporally separate components. In contrast, less than a tenth of the national sites contain both MSA and LSA components. Only 3% of the Hwange sites are exclusively ESA, while about 2% of the national sites are ESA only. Only 6% of the Hwange sites are exclusively MSA, as compared to almost 30% of the national sites. About 8.5% of the Hwange sites may be ESA and MSA together, or a transitional early MSA only, while 6% of the national sites have evidence of this possible co-occurrence. In Hwange there are no ESA and LSA co-occurrences without MSA, but nationally a small number (1%) of sites yielded ESA and LSA co-occurrences without MSA.

The LSA is in seven times more different places in Hwange than the ESA; in the national sites, the LSA outnumbers the ESA only about 1.2 to 1. In Hwange the LSA is in about 1.5 times more places than the MSA, and nationally the MSA sites outnumber LSA by a similar 1.4 to 1. The MSA and ESA in Hwange co-occur in the same places only about one fourth as often as the MSA and LSA co-occur; nationally, MSA and ESA co-occur about 2/3 as often as MSA and LSA co-occur.

If sampling errors are not to blame, it appears that differences in these trends may suggest a possibly unique local sequence of changes in landscape use over time in Hwange. The MSA sites are not as abundant in Hwange as in the rest of the country, but where MSA occupations do occur they are more often found with LSA artifacts. The ESA in Hwange is also relatively scarce by comparison to the numbers of sites in the national sample. We emphasize that the sample is not complete, and it is one of convenience with adequate data for our purposes. We strongly urge other researchers to examine the data available in the Archaeological Survey of Zimbabwe and revise the suggested comparisons we have tentatively offered here.

Landscape preferences in Hwange are distinct in each stone-age phase. Where there are quartz/quartzite outcroppings at the edges of the Kalahari sand blanket, Bembesi (ESA) components have been

found. Present-day road-gravel pits excavated into hardpan and nodular calcrete layers at the interface of the Kalahari sand blanket and the quartz/quartzite outcroppings contain both Bembesi ESA and what could be Tshangula MSA. The different hominins carrying these different technologies were attracted to the same microzones, even though widely separated in time. Although there is an extensive use of the different parts of Hwange National Park by MSA hominins, it is still limited when compared to the later LSA pattern.

The MSA and LSA co-occurrences are found (1) in the open calcrete-underlain savannahs, the large pan plateaus or basins, and the wider vleis where ponding occurred, or (2) at the intersections of second and third-order streams, or (3) at the edges of the Kalahari sand blanket where pans are most densely distributed.

The occurrences of exclusively LSA materials, or sites containing both LSA and Iron Age artifacts, are in the Kalahari sands far from its edges, especially around pans and vleis, or in the rocky hills of the north not near large water sources.

The overall mobility and foraging strategy of the MSA seems tentative or exploratory, when compared to LSA strategies. At a gross level, landscape-use appears to be patterned in what we would call a "travel-through" style, opposed to a "resident" style. The MSA sites we have examined seem much like the campsites we ourselves create in our annual visits to the study area; we travel in direct routes to target locales, we make a limited number of sites with relatively small sizes but sometimes re-visit them and slightly increase their sizes, and the functions of our sites are relatively few. MSA sites are sharply bounded in size and artifact numbers, limited in distribution, and lack distinctive activity areas. These characteristics are noticeably different from those of LSA sites in the study area. The LSA foragers appear to be much more at home throughout many different habitats of the entire study area, and traces of their presence and dispersals are nearly everywhere. The LSA site inventories range from a few tools or flakes to enormous scatters of implements and debitage, whereas MSA sites generally have low numbers of tools in limited scatter area. The distributions of LSA tools having different functions (cores *versus* microliths *versus* scrapers, for example) are often located in different spatial areas within sites, while

**Table 2:** Time, technology, and hominin behavior.

	ESA	MSA	LSA
<b>no. of water sources utilized</b>	few, calcrete + northern hills zones only	few, calcrete + northern hills only	many everywhere, clustered <u>and</u> scattered
<b>subsistence</b>	[no data]	narrow range of larger animals	wide range of habitats, hence resources(?)
<b>site types</b>	small toolmaking camps with many tools, ephemeral?	special-purpose locations, small extractive camps, ephemeral	field camps, stations, locations, small camps, ephemeral, cold-season rockshelter camps
<b>site structure</b>	no internal differentiation	little/no internal differentiation	little in some, moderate to high in others
<b>site furniture/caches</b>	no furniture, large cutting implements cached(?)	small grinding stones, no caches	piled rocks, few to no features, core caches
<b>storage</b>	no evidence	no evidence	possible rockshelter pits
<b>assemblage specialization</b>	diverse tools, all assemblages similar(?)	limited range of tools, slight differences at different sites	diverse assemblages, possibly related to special resource areas
<b>artifact "rain"</b>	heavy, clustered, not palimpsests(?)	light, clustered, fine-grained	heavy to light, clustered to diffuse; extremely heavy in rockshelters
<b>artifact types</b>	limited range: cut, saw, chop, scrape, carve	points, cutters, scrapers (specialized butchering?)	cut and scrape, drill, dig, pound, grind (all kinds - not patterned)
<b>debitage types</b>	manufacturing and re-sharpening	re-sharpening, core reduction	core reduction, re-sharpening and backing
<b>stone source</b>	local, no exotics	nearby, local, possible exotics	mostly local, and occasional exotic
<b>discard patterns</b>	used? and unbroken complete tools; debitage	used? and unbroken complete tools; little debitage, exhausted cores	used broken and unbroken tools; some debitage (heavy in rockshelters); broken and exhausted cores
<b>assemblage variability</b>	insignificant to low	low to moderate	insignificant to moderate

various classes of MSA tools seem to co-occur together in the same areas.

In terms of overall exploitation of resources, the evidence from all phases (ESA, MSA, and LSA) shows that a relatively wide but nonetheless plainly restricted range of area resources were used. The sites of all ages are spatially distributed more densely in the somewhat warmer and wetter north, where woodlands were more open, the substrates are rockier, and some surface water sources are seasonally continuous. This part of the study area is smaller percentage of the total land surface, but contains the greater percentage of sites.

Table 2 (inspired by a table of unrelated data in Meltzer 1995) compares characteristics from the study area's surface assemblages for all stone-age phases. McBrearty and Brooks (2000) defined modern human behavior in the stone-age context as including tool class standardization, diversity of tool forms, specialization of toolkits, hafting, use of exotic materials, and regional variability, among other features. The interpreted data in Table 2 are not fully comparable to lists in references such as McBrearty and Brooks (2000) and Henshilwood and Marean (2003), but we think they are useful guides for thinking about changes in human behavior over time in northwestern Zimbabwe.

## Conclusions

In summary, we propose that the MSA hominins in Hwange National Park traveled through the region without staying long anywhere, but their travel was more meandering than that of the ESA hominins who headed exclusively (or so it seems) to toolstone sources at water points (Haynes and Klimowicz 2007). In the MSA, hominins created a pattern of landscape use and site distribution that suggests they moved in small groups from water sources to animal and plant food sources, perhaps on special-purpose extractive forays such as hunting parties might make, but did not establish base camps. Short term occupations were rarely repeated in any one site.

We end this speculative report by stating that MSA occupations in northwestern Zimbabwe deserve to be better analyzed and better described. The level of archaeological understanding is inadequate. We hope more research will be undertaken to improve the state of knowledge. The data available are

far more encompassing than what we have reported here from one National Park. For example, the Victoria Falls and Zambesi River valley 100 km north of Hwange National Park also contain a wealth of MSA data, some of which has been published (Bond and Clark 1954) but most of which has never been well analyzed (K. R. Robinson undated and unpublished notes about Masui river, Victoria Falls, curated in the Museum of Human Sciences, Archaeological Survey of Zimbabwe; also notes from an unidentified source, dated "193?", "Implements from Masue Siding," also in the Museum of Human Sciences).

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**Footnotes**

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