

A review of the reconstructed palaeoenvironmental record of Zimbabwe and call for multidisciplinary research



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ABSTRACT

This paper is a review article focussing on the research on past environments of Zimbabwe. The paper synthesises the current knowledge on palaeo-climates and other environmental parameters that inform debates and discussions on climate change and human adaptation. The study of palaeoenvironments provides environmental knowledge that chronologically goes beyond the range of written climatic records that are available in the country. The palaeoenvironmental data now available shows that our human ancestors in Zimbabwe have survived numerous climatic upheavals since the beginning of the Stone Age. However, limited research in the Stone Age and the variety of proxy data available creates a less coherent record. Extrapolation of evidence from the region makes the data less reliable for archaeological interpretations. The paper shows conflicting signals across the region at some specific periods. There are numerous gaps in the record. The paper concludes by calling for multidisciplinary research on the past environments of Zimbabwe.

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1. Background

According to Hannaford (2014, p. 7) “studying the past is the only way of understanding the effects of and human responses to climate change”. Bond (1969, p. 209) also had observed that:

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“To thrive in the present environment we should know how it rose...”. These statements are critical in current discussions of climate change in Zimbabwe (Fig. 1). This paper therefore provides background knowledge that is relevant in informing the on-going deliberations on climate change and the efforts towards mitigation of these changes.

In Zimbabwe, Bond (1957a, 1965), Summers (1960) and Flint and Bond (1968) provide the earliest attempts at reconstructing the past environments of the country (then known as Rhodesia). Bond's (1957a, 1957b, 1964), Flint and Bond (1968), and Bond and Clark's (1954)

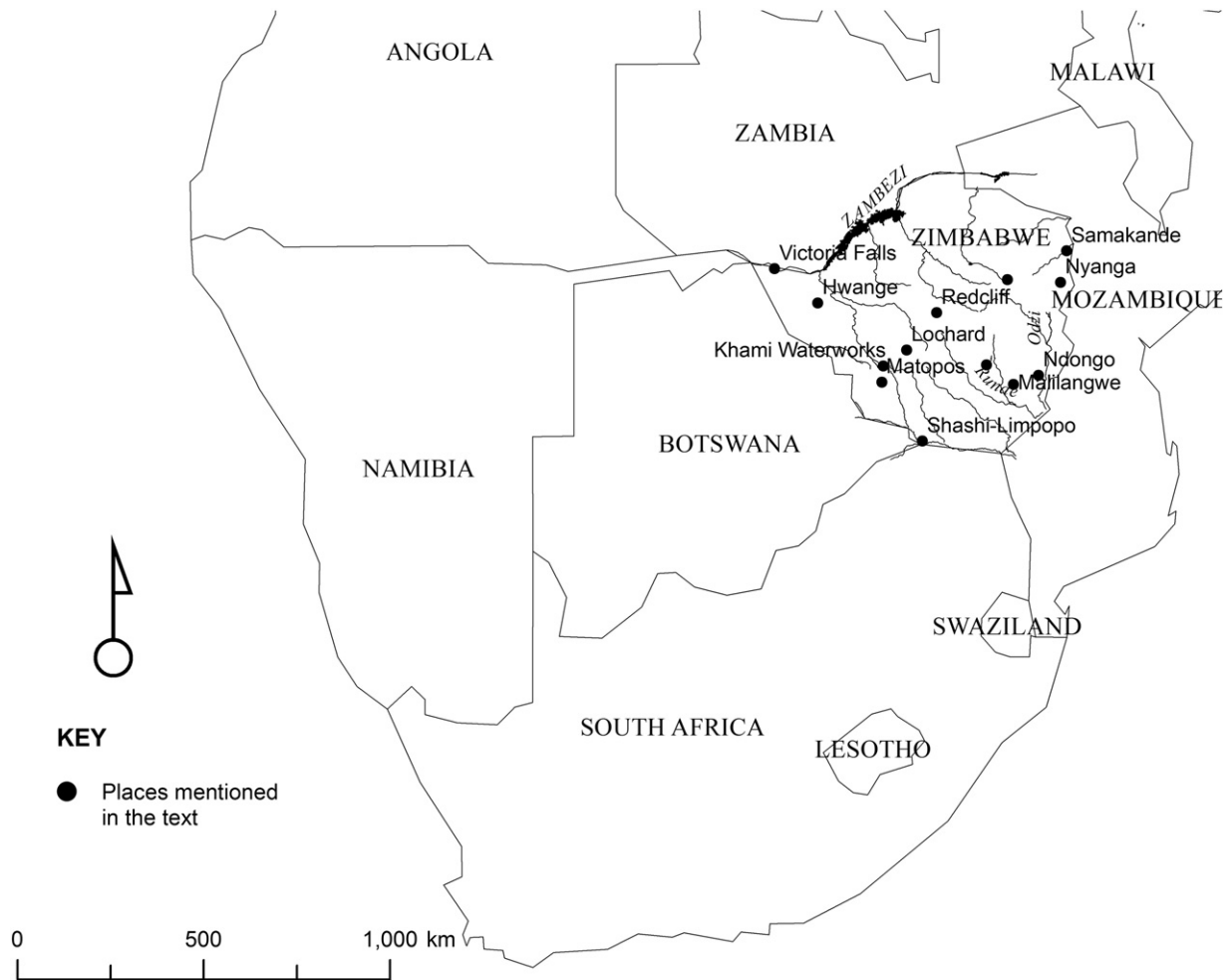


Fig. 1. Map of southern Africa showing the locations of archaeological sites in Zimbabwe mentioned in the paper.

methods of recovering such data were mostly geophysical in nature, involving observing and analysing fluvial and colluvial deposits and remnants of chemical processes in the formation of feldspar, calcrete, silcrete and ferricrete. However, Bond relied on archaeological material to come up with a chronology for his estimations of average annual precipitation during particular periods (see Bond and Summers, 1951; Bond and Clark, 1954). Bond (1964) presented a summary of these processes and the implied environmental conditions. On the other hand, Summers' (1960) work is the earliest archaeological synthesis on the topic of human interaction with the environment in the country. He used Bond's geomorphological data to postulate the precipitation and vegetation of the rest of Zimbabwe during particular periods that were defined archaeologically, and what this meant in terms of socio-economic and technological developments of the societies concerned.

As shall be seen later in the paper, the two syntheses by Bond and Summers have some differences in the quantities of precipitation postulated such that further research is indeed necessary. The syntheses were also constrained by the limited research, both archaeological and geological, that hitherto had been carried out in the country. By that time much of the archaeological research had only been conducted mainly in the Victoria Falls area in the Zambezi valley, Matopo hills, Khami Waterworks and at sites associated with the stone building traditions now known as the Zimbabwe culture (Summers, 1960).

Although there is still much to be done in terms of archaeological research targeted at establishing past environments in Zimbabwe, the increase in general archaeological research since the 1960s has somewhat enriched the current discussion on climate change and adaptation. Archaeologists have generated more data from sites in various parts of

the country (e.g. Summers, 1960; Brain, 1969; Cruz-Uribe, 1983; Walker, 1995; Jonsson, 1998; Pwiti, 1996; Pikirayi, 1993; Haynes, 1996; Stokes et al., 1998; Burrett, 2002; Katsamudanga, 2007, 2009; Manyanga, 2001, 2006; Shenjere, 2011) to now enable making sense of the past environments of Zimbabwe. Some areas that were archaeologically unexplored in the 1960s (Summers, 1960) have now been extensively researched. For example, the Limpopo and the mid-Zambezi valleys and the south east of the country have seen increased archaeological attention since the 1990s (Pwiti, 1996; Pikirayi, 1993, 2001a, 2001b, 2003; Manyanga, 2001, 2006; Thorp, 2004, 2005). To the east and north east Shenjere (2011), Mupira (2008), Katsamudanga (2007) and Soper (2002, 2006) are some of the researchers who have recently worked in the area.

Most of the studies mentioned above allude to environmental issues and the impact of specific factors such as rainfall on human societies. This is especially so for the lowvelds of the country where researchers sought to tackle and respond to Summers' (1960, 1967) thinking that these areas were not habitable in the past due to their marginal environments and the prevalence of tsetse flies (see Pwiti, 1996; Manyanga, 2001, 2006). The major limitation with some of these studies is that they sought mainly to demonstrate the existence of past societies in different parts of the country and to establish the archaeological cultures in those areas. In addition, most of these studies deal with Farming Communities which leaves Flint, Bond and Summers' work being the main syntheses about the palaeoenvironments of the Stone Age period. Of the recent research, environmental reconstruction was incidental, frequently making reference to Summers' (1960, 1967) work or simply providing extant conditions as background information for discussion

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