Environmental change and fire management over 50,000 years in Central Queensland

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Introduction

The evidence of human habitation of Central Queensland dates back almost 20,000 years[1]. Yet, how people interacted with and influenced the Central Queensland landscape remains poorly understood. Little palaeoenvironmental work has been conducted, leaving a huge gap in our knowledge of the past human-environment dynamics of the region, particularly in terms of open-air sites.

Figure 1. Photo of the Abercorn Springs Mound.

Abercorn Springs Mound

Figure 2. The Abercorn Springs study site.

The Abercorn Springs Mound located in Central Queensland is a wetland spring mound dating to almost 50,000 BP. It is some 125km inland from Bundaberg, to the south of Cania Gorge and adjacent to Three Moon Creek. The core was taken from the highest part of the mound and intersects 5m of peat.

Methodologies

To reconstruct the past environment and investigate the use of fire to manage said environment with:

- Pollen analysis
- Microcharcoal analysis

This provides a regional picture of environmental change and fire occurrences.

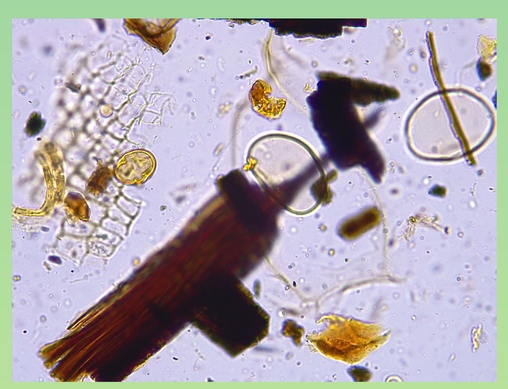

Figure 3. Photo of pollen and microcharcoal from the Abercorn Core.

Palaeoenvironmental Reconstruction

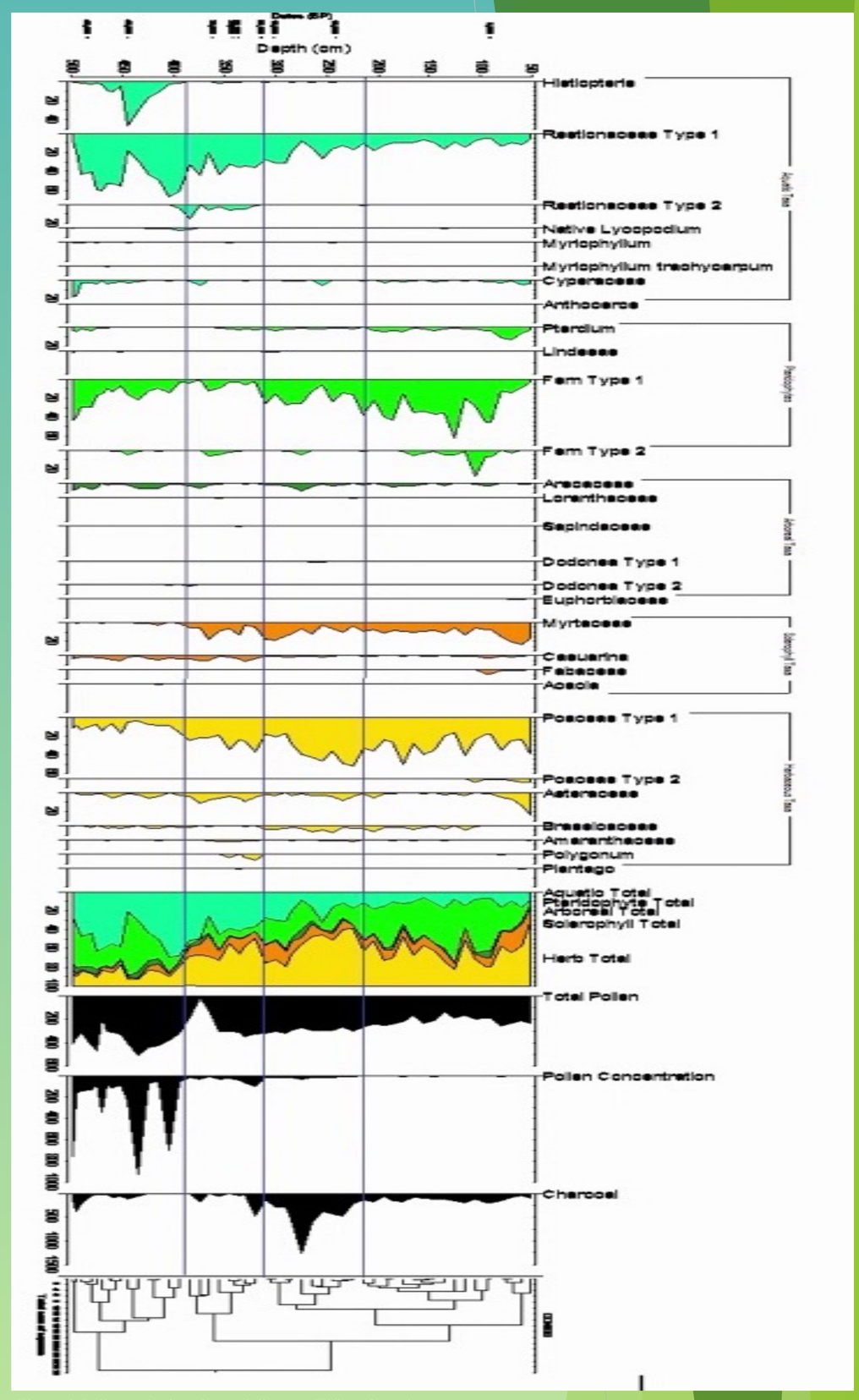

Figure 4. Pollen and microcharcoal diagram (Tilia software).

Environmental management, Springs, and Archaeology

Abercorn Springs has been incredibly dynamic over the past 50,000 years. There is an overall drying trend, but the switching between dominant plant types is readily visible.

Several microcharcoal peaks coincide with an opening up of the environment.

Microcharcoal peaks may also indicate the burning of herbaceous plants – this induces an increased flowering and germination of said plants ensuring continued and increased food production[2].

Figure 5. Map of the Great Artesian Springs in Queensland[3]

Springs can be attractive environments for people. They have fresh water, plant foods, and fish and shellfish. There are hundreds around Queensland including in arid environments.

They provide important **opportunities to understand the human-landscape relationship via open-air sites with detailed palaeoenvironmental records.**

References:

[1] Mulvaney, D. and J. Kamminga (1999) *The Prehistory of Australia*. Allen & Unwin, St Leonards, NSW.

[2]Gott, B. (2005) Aboriginal fire management in south-eastern Australia: Aims and frequency. *Journal of Biogeography*, 32(7), pp. 1203-1208.

[3] Department of Environment and Science (2015) *Sedimentary Rocks (Great Artesian Basin)*, Wetland*Info*, Queensland Government, viewed 14 October 2022. <https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/sedimentary-rocks-great-artesian-basin/springs.html>

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