

Reconstructing the Agricultural System of the Byzantine Negev (Israel)



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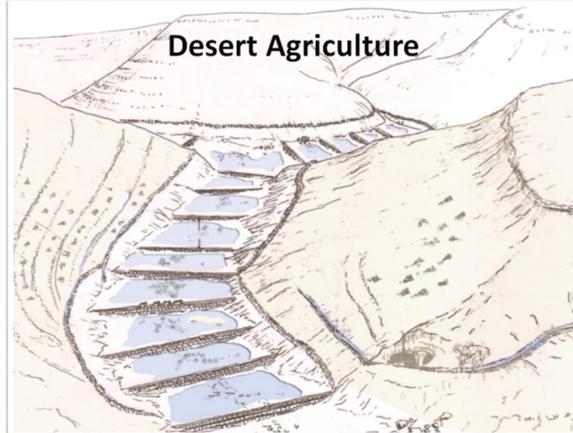
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Introduction

This study addresses a test-case for societal collapse in a marginal environment which provides a unique opportunity for unraveling climatic and anthropogenic influences. This will be accomplished through economic and environmental reconstruction, based on the rich and diverse plant remains from middens at three Negev sites: Shivta (Sobata, Isbeita), Halutza (Elusa, al-Khalasa), and Nitzana (Nessana, Auja el-Hafir).



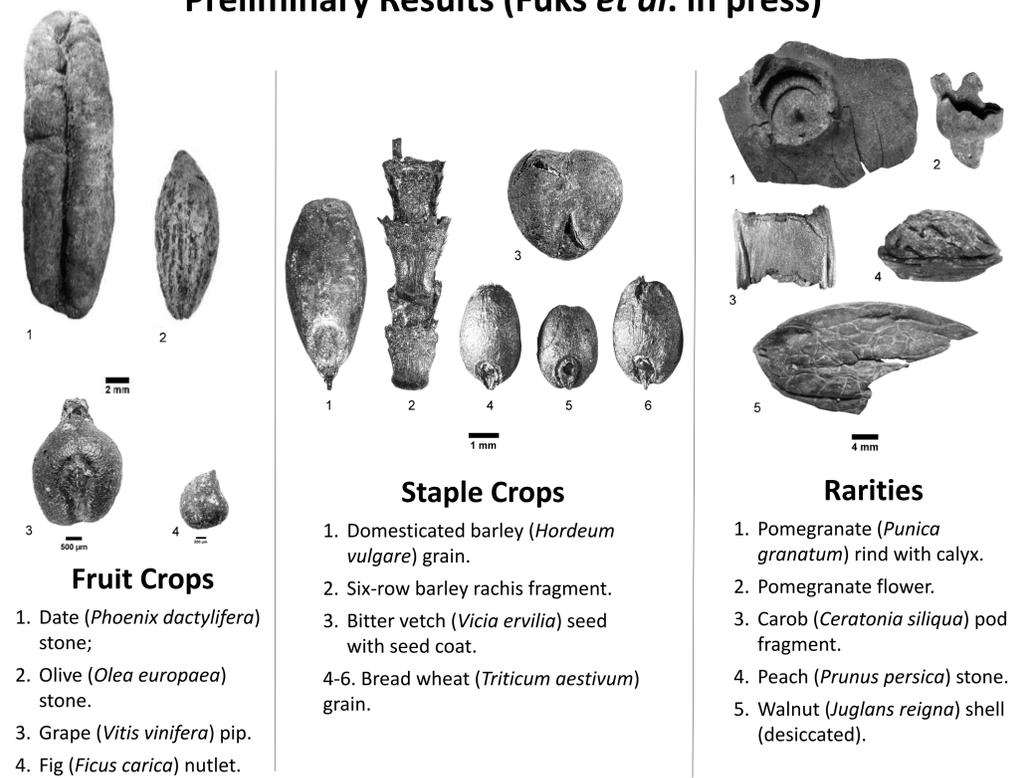
Shivta



Research Questions and Method

The Big Issue	The Research Question	Archaeobotanical Proxies
The Islamic "Green Revolution"	Is there evidence of new introductions following the Islamic conquests?	Presence/absence of newly introduced species.
The Spice Route Trade	Which crops were imported? Luxury Items?	Presence/absence of: a. foreign weed species b. foreign crop species c. rare and desirable crop species.
The Decline of Mediterranean Trade	Which commercial crops were grown? Were they affected by the Islamic conquests?	Chronological changes in frequencies of: a. grape vs. cereals b. grape vs. olive c. barley vs. wheat.
From Polis To Madina – when exactly?	Is there evidence for economic decline/growth in the: 6th, 7th, 8th or 9th centuries?	Changes in frequencies of: a. staples vs. commercial crops b. wild vs. cultivated edibles c. barley vs. wheat.
Climate Change?	Is there evidence for desiccation, affecting natural and agricultural vegetation?	Changes in frequencies of: a. Saharo-Arabian vegetation vs. Irano-Turanian and Mediterranean vegetation. b. drought-resistant weeds/crops.

Preliminary Results (Fuks *et al.* in press)*



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| <p>Fruit Crops</p> <ol style="list-style-type: none"> 1. Date (<i>Phoenix dactylifera</i>) stone; 2. Olive (<i>Olea europaea</i>) stone. 3. Grape (<i>Vitis vinifera</i>) pip. 4. Fig (<i>Ficus carica</i>) nutlet. | <p>Staple Crops</p> <ol style="list-style-type: none"> 1. Domesticated barley (<i>Hordeum vulgare</i>) grain. 2. Six-row barley rachis fragment. 3. Bitter vetch (<i>Vicia ervilia</i>) seed with seed coat. 4-6. Bread wheat (<i>Triticum aestivum</i>) grain. | <p>Rarities</p> <ol style="list-style-type: none"> 1. Pomegranate (<i>Punica granatum</i>) rind with calyx. 2. Pomegranate flower. 3. Carob (<i>Ceratonia siliqua</i>) pod fragment. 4. Peach (<i>Prunus persica</i>) stone. 5. Walnut (<i>Juglans regia</i>) shell (desiccated). |
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*Fuks, Daniel, Ehud Weiss, Yotam Tepper, and Guy Bar-Oz. (In press). Seeds of collapse? Reconstructing the ancient agricultural economy at Shivta in the Negev. *Antiquity Project Gallery*.

Conclusions

Preliminary observations from Shivta and Halutza suggest that locally grown cereals and pulses were the staple crops. The ubiquity of grape pips appears to reflect commercial viticulture. Other major fruit species include olives, dates and figs. Presence/absence of non-local taxa, and chronological changes in relative frequencies of specific crops and vegetation types, will enable unprecedented reconstruction of the Byzantine-Early Islamic Negev agricultural economy. This will contribute to important questions on the causes and timing of the Negev collapse.



Midden Stratigraphy (Halutza)



"Dance of the Sieves"

Acknowledgements

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