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# Archaeobotanical and Zooarchaeological (Large Mammal Bone, Shell and Fish Remains) Data from the 'Palace and Landscape at Palaikastro' (PALAP) Excavation Project, Crete, Greece

DATA PAPER

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## ABSTRACT

The dataset presented here includes four .csv files with primary archaeobotanical, large mammal bone, mollusc and fish remains data, recovered during the PALAP project at Palaikastro, east Crete, Greece, between 2013 and 2015. The data describe bioarchaeological remains from the south-east sector of the Bronze Age town at Palaikastro, recovered with systematic sampling and employing flotation, dry-sieving and hand collection. All remains were identified and quantified using established methodologies and were then stored at the premises of the British School at Athens in Crete (Ayios Antonios centre, Palaikastro). The dataset will be of use to archaeologists working in the Aegean and beyond and can contribute to key debates related to the Bronze Age, such as the emergence and economic organisation of urban centres.

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KEYWORDS:

Bronze Age; Aegean archaeology; Crete; archaeobotany; zooarchaeology; archaeomalacology; fish remains

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# (1) OVERVIEW

## CONTEXT

The archaeobotanical and zooarchaeological (large mammal bone, shell and fish remains) datasets presented here were produced by the study of primary bioarchaeological material collected during the '*Palaikastro Phase 4. Urbanization in Bronze Age Crete: Between Palace and Landscape at Palaikastro*' (PALAP) project (2012–2016) of the Bronze Age town at Roussolakkos, Palaikastro, Greece. The site is located at the eastern part of the island of Crete and was first excavated in 1902 by Bosanquet and Dawkins, which was followed by another two archaeological campaigns in the 1960s and 1980–1990s [1] before the latest PALAP project. The excavations revealed what was the fourth largest town in Bronze Age Crete, after Knossos, Malia, and Phaistos, but differing from the other three in that it lacked, based on current evidence, a palatial centre. The town at Palaikastro was organised in habitation blocks, including a 'Main Street', and was inhabited from the EM through to the LM III period [1]. The PALAP excavations focused on the southeast of the core of the town and unearthed a new occupation area. Three main buildings (named AM1, AP1 and MP1) were excavated as well as their adjacent external spaces (for details see [2]). Bioarchaeological (plants, large mammal bones, shells and fish remains) material were systematically recovered from the whole excavated area, adding new data for a key period in prehistoric Aegean. In particular, the Bronze Age in Crete saw the emergence of palatial societies, the origins and organisation of which are very much linked to different theories related to agrarian resource management [e.g. 3–6]. The current dataset, combined with environmental [7] and landscape archaeology [8], has contributed to significant new insights into the socio-economic organisation of the eastern part of Crete in prehistory, highlighting a strong emphasis on extensive, integrated olive and sheep/goat management ([9], for details on the analysis and interpretation of the results of each of the four datasets presented here see [10–13]).

## SPATIAL COVERAGE

Roussolakkos, Palaikastro, Crete, Greece
South-western boundary of site: 35.193442241693454 N / 26.27631471982799 E
North-western boundary of site: 35.1936110201524 N / 26.27648168733615 E
North-eastern boundary of site: 35.19352608298474 N / 26.276823668979375 E
South-eastern boundary of site: 35.19327565481868 N / 26.276686205769842 E

## TEMPORAL COVERAGE

Early Minoan II A to Late Minoan III B, from *c.* 2650 BC to *c.* 1200 BC.

# (2) METHODS

## SAMPLING STRATEGY

Bulk soil samples were collected at the discretion of the archaeologists and after consultation with the environmental archaeology director. Most excavated units were sampled excluding topsoil and other contexts that were visibly disturbed, as attested, for instance, by the presence of substantial quantities of intrusive modern material culture. Samples were taken from the centre of the units but in the case of units covering large areas, samples were taken roughly every 1 m × 1 m squares. Hand collection of larger organic specimens (animal bones, shells) also took place during excavation in a systematic manner. Dry sieving of all excavated soil (except topsoil) further facilitated the recovery of smaller, yet still visible by the naked eye, organic remains.

## STEPS

Soil samples of about 60 L were taken where possible. In the case of smaller excavation units, the whole soil was collected. The volume of each sample was measured using calibrated buckets. Very compact, clayey soil samples were left to soak in buckets before processing. All samples were processed with a flotation machine [14], adapted to recycle water. For the collection of the heavier residue a mesh with aperture 1 mm was used. The light, floatable fraction (flot) was collected in chiffons with an aperture of *c.* 250μm. All parts were air dried under shade. Once dry, the heavy residues were sorted under the light of a lamp for all types of organic material. The flots were sorted using stereoscopes with x7-x45 magnification. Animal bones and shells were hand washed, using tap water and soft brushes to avoid damage.

Organic remains were identified to the lowest possible taxonomic level. Plant remains were quantified using the Minimum Number of Individuals (MNI) principle, assigning a diagnostic zone for each plant part to be counted. In the case of fish remains and shells, quantification was based on the Number of Identified Specimens (NISP). In the case of fish remains, apart from the taxon, other parameters recorded included the body part, its location on the body (left, right side), overall size and the approximate total length of the live fish. Large mammal bones were counted with the method of Minimum Number of Anatomical Units (MinAU). This was calculated using the Maximum Number of Anatomical Units (MaxAU), a version of NISP in which only selected anatomical elements are recorded and each long bone is divided into a proximal and distal half instead of recording it as a single specimen. Once the MaxAU was established, the MinAU was calculated by counting only the most informative (in terms of age, sex, etc.) of the specimens that belonged to the same anatomical unit of the same animal for the examination of the relative abundance of taxa, body parts, etc. ([15]:

24–5; [16]: 1080, 1085). The body part, the bone end (proximal or distal) and the location (left or right side) were also recorded for large mammal bones. For more details on the methodology employed for the study of all bioarchaeological remains see [10–13] and for detailed contextual information per unit see [2].

### QUALITY CONTROL

All organic remains were identified on the basis of established morphological criteria with the aid of atlases [17–30] and comparison with material from the authors' personal modern collections. All authors have long experience in the study of bioarchaeological remains from the Aegean (Livarda, Veropoulidou, Tzevelekidi) and Mediterranean (Marlasca), and have contributed several peer reviewed publications on their respective specialisation. All material is stored at the premises of the 'British School at Athens' (BSA) at the study centre of Ayios Antonios, Palaikastro, Crete, and are available for any future studies and verification, subject to the BSA policies and permits.

### CONSTRAINTS

N/A

## (3) DATASET DESCRIPTION

### OBJECT NAME

PALAP_Archaeobotanical remains from Palaikastro, Crete (.csv file)
PALAP_Animal bone remains from Palaikastro, Crete (.csv file)
PALAP_Shell remains from Palaikastro, Crete (.csv file)
PALAP_Fish remains from Palaikastro, Crete (.csv file)

### DATA TYPE

Primary data

### FORMAT NAMES AND VERSIONS

.csv

### CREATION DATES

The datasets were created between July 2013 and March 2023 (the primary material upon which these datasets are based was excavated between July 2013 and July 2015).

### DATASET CREATORS

Alexandra Livarda (archaeobotany)
Vasiliki Tzevelekidi (large mammal bone remains)
Rena Veropoulidou (shellfish remains)
Ricard Marlasca Martín (fish remains)
Alexandra Kriti (then University of Crete, Greece), Mihalis Trivizas (then University of Crete, Greece), Dr Mila Andonova (then University of Nottingham, UK), Dr Leslie Bode (then University of Nottingham, UK) and Dr Dani De Carle (then University of Sheffield, UK) assisted in the flotation and sorting of the heavy residues and flots.

### LANGUAGE

English

### LICENSE



### REPOSITORY LOCATION

PALAP_Archaeobotanical remains from Palaikastro, Crete
DOI: https://doi.org/10.5281/zenodo.7983089
PALAP_Animal bone remains from Palaikastro, Crete
DOI: https://doi.org/10.5281/zenodo.7991251
PALAP_Shell remains from Palaikastro, Crete
DOI: https://doi.org/10.5281/zenodo.7991259
PALAP_Fish remains from Palaikastro, Crete
DOI: https://doi.org/10.5281/zenodo.7991262

### PUBLICATION DATE

02/04/2023

## (4) REUSE POTENTIAL

The datasets are provided in .csv format that will ease their incorporation into other datasets and reuse. They will be important sources of information for archaeobotanists, archaeomalacologists, zooarchaeologists and other archaeologists working in Crete, the Aegean and beyond. These primary data can be employed in further analysis to explore issues of subsistence, agriculture, farming, economy, social organisation and resource management in the Bronze Age in the eastern Mediterranean and beyond. They can be also combined with other data to explore debated themes in Aegean archaeology, such as the emergence of urbanization.

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who assisted, under supervision, in the flotation, animal and shell cleaning, and heavy residue sorting process.

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## COMPETING INTERESTS

The authors have no competing interests to declare.

## AUTHOR CONTRIBUTIONS

**Alexandra Livarda** Co-director of the PALAP project, environmental archaeology director, in charge of the study of the archaeobotanical material (macroremains other than charcoal) of the PALAP excavations.

**Vasiliki Tzevelekidi** In charge of the study of the zooarchaeological material (large mammal bones) of the PALAP excavations.

**Rena Veropoulidou** In charge of the study of the zooarchaeological material (shellfish remains) of the PALAP excavations.

**Ricard Marlasca Martín** In charge of the study of the zooarchaeological material (fish remains) of the PALAP excavations.

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