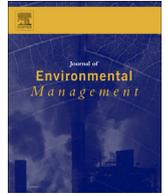




Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman

Research article

Economic and social activities on ancient Cypriot terraced landscapes

Elizabeth Ridder^{a,*}, Christopher S. Galletti^b, Patricia L. Fall^c, Steven E. Falconer^d^a Department of Liberal Studies, California State University, San Marcos, 333 S. Twin Oaks Valley Rd., San Marcos, CA 92096, USA^b Department of Geography, Dartmouth College, 6017 Fairchild Hall, Hanover, NH 03755-3571, USA^c Department of Geography & Earth Sciences, University of North Carolina Charlotte, 9201 University City Blvd., Charlotte, NC 28223, USA^d Department of Anthropology, University of North Carolina Charlotte, 9201 University City Blvd., Charlotte, NC 28223, USA

ARTICLE INFO

Article history:

Received 1 July 2016

Received in revised form

25 November 2016

Accepted 14 December 2016

Available online xxx

Keywords:

Bronze Age

Cyprus

Landscape archaeology

Taskscape

Terraced landscapes

Managed environment

ABSTRACT

We investigate ancient agricultural terraces and their associated social and economic activities across the site complex consisting of the village at Politiko-Troullia and its more extensive associated taskscape. Surface artifact distributions mapped over 12 ha are integrated with evidence excavated from this Bronze Age settlement in central Cyprus. Contrary to expectations, artifact densities do not diminish with distance from the village architecture. In particular, concentrations of Prehistoric Bronze Age ceramics and ground stone artifacts are most pronounced on nearby terraced hillsides. These terraces were not utilized for domestic structures, but for extensive processing of agricultural crops and copper ore. Bronze Age excavated plant remains indicate cultivation of olives, grapes and figs, with wood resources dominated by olive and pine. Larger, non-portable ground stones and gaming stones are associated with communal social and economic activities in open courtyard settings in Politiko-Troullia. This category of ground stone also is particularly common on the terraced hillsides around Troullia, suggesting that similar behaviors occurred beyond village structures. The terraced landscape of Politiko-Troullia exemplifies a multi-faceted taskscape with a range of agricultural, metallurgical and social activities.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

1.1. Research objectives

Terraced landscapes are nearly ubiquitous in Mediterranean environments and provide insights into material culture patterning, agrarian activities and landscape management through time. The functions of terraces at their time of construction, as well as the dates of construction or abandonment, provide ongoing analytical challenges (Rackham and Moody, 1996). However, there is extensive evidence that terraces were constructed as far back as the Bronze Age in the Mediterranean (Bevan and Conolly, 2011; Krahtopoulou and Frederick, 2008). On Mediterranean islands, terrace walls are often constructed, and reconstructed, using stones as retaining walls (Rackham and Moody, 1996). On Cyprus, terraces have been used for at least the past several centuries (Given and Knapp, 2003; Wagstaff, 1992) in a variety of forms and modes of

construction (Fall et al., 2012). The terraces of Politiko-Troullia and Koloikremmos are built most commonly with multiple courses of small, rounded limestone and igneous cobbles, and minimal small stone chinking. Some of these terrace walls also incorporate prehistoric Bronze Age pottery sherds, ground stone artifacts, or Roman roof tile fragments (Fall et al., 2012).

Terraces are often constructed to reduce soil erosion, improve water retention (Rackham and Moody, 1996; Sandor and Eash, 1991; Treacy and Denevan, 1994), and create surfaces that increase the area or accessibility of arable fields (Bevan and Conolly, 2011; Gallart et al., 1994; Rackham and Moody, 1996). Bronze Age terraces adjacent to the settlement at Politiko-Troullia would have provided many of these functions, given the slope structure and minimal soil development on the slopes of Koloikremmos. Field surveys conducted between 2004 and 2016 highlight material deposition patterns in which the largest concentrations of surface sherds and ground stones occur within the largest, flattest portions of the terraced hillsides. This study assesses distributions of material culture as they vary in time and space over the village site of Politiko-Troullia and the adjacent slopes of Politiko-Koloikremmos. In addition to enhanced soil and water retention, we hypothesize that this terraced landscape was used to process agricultural and

* Corresponding author.

E-mail addresses: eridder@csusm.edu (E. Ridder), christopher.s.galletti@dartmouth.edu (C.S. Galletti), pfall@uncc.edu (P.L. Fall), sfalcon1@uncc.edu (S.E. Falconer).

non-agricultural resources, especially local minerals. In particular, our initial observations suggest that in conjunction with agricultural production, the relatively flat topography, nearby woodland fuel sources, proximity to water and exposure to prevailing winds made the easternmost terraces in this locality a preferred setting for copper ore reduction and primary smelting.

2. Landscape of Politiko-Troullia and Politiko-Koloikremmos

The Bronze Age settlement of Politiko-Troullia is situated at 400 masl in central Cyprus at the interface of the fertile agricultural lands of the Mesaoria Plain and the foothills of the Troodos Mountains (Fig. 1). A series of nine calibrated radiocarbon dates suggests habitation spanning a century or more around 2000 cal BCE (Falconer et al., 2014, Table 1). The remains of Politiko-Troullia lie buried on a stable siltstone saddle between the now deeply incised Kamaras Creek on its west and the Pediaios River to the east. This archaeological site lies at the contact between Quaternary marine and alluvial deposits, and Cretaceous limestone, which collectively comprise the foothills of the uplifted core of the Troodos Mountains. The copper-bearing pillow lavas that ring the margin of the Troodos Massif are exposed in the small drainage of Kamaras Creek about 500 m upstream, to the south of the site. A Cretaceous limestone, east-west trending hogback forms the hill of Politiko-Koloikremmos along Politiko-Troullia's southern boundary. Cemented Quaternary sands and gravels form the hilltop of Politiko-Lampertis, about 300 m to the north of Troullia (Fig. 2).

The inhabitants of Politiko-Troullia implemented a mixed subsistence economy based on orchard cultivation, sheep/goat husbandry and woodland resources. Excavations conducted between 2006 and 2015 produced a carbonized seed assemblage predominated by *Olea*, *Vitis* and *Ficus*, and a pronounced majority of domesticated animal bones represents *Ovis aries* and *Capra hircus* (Falconer and Fall, 2013). Charcoal evidence indicates burning of *Pinus*, *Olea* and *Quercus* fuelwood harvested from nearby orchards and forests (Fall et al., 2015; Klinge, 2013; Klinge and Fall, 2010), while abundant bones from Mesopotamian fallow deer (*Dama dama mesopotamica*) reflect hunting of woodland animals. Beyond this portrait of subsistence economy, the excavation of Politiko-Troullia also revealed metallurgical remains, including unprocessed ore, numerous slags, copper tongs, copper sheet, crucible fragments embedded with residual copper, a limestone casting mold, and a rudimentary pit furnace (Falconer et al., 2012; Fall et al., 2008). These remains and their patterning within the settlement, document the full process for village-based production of utilitarian copper implements (Falconer and Fall, 2013). (The use of tuyères in subsequent periods enabled higher temperature furnaces, more efficient smelting and higher volume copper production, as exemplified at nearby Politiko-Phorades [Kassianidou, 1999; Knapp et al., 2002]).

The Bronze Age village of Politiko-Troullia and the adjacent terraced landscape on Politiko-Koloikremmos jointly cover approximately 18 ha, including village compounds and courtyards, and an extramural “taskscape.” In keeping with its original definition (Ingold, 1993), we use this term to conceptualize an

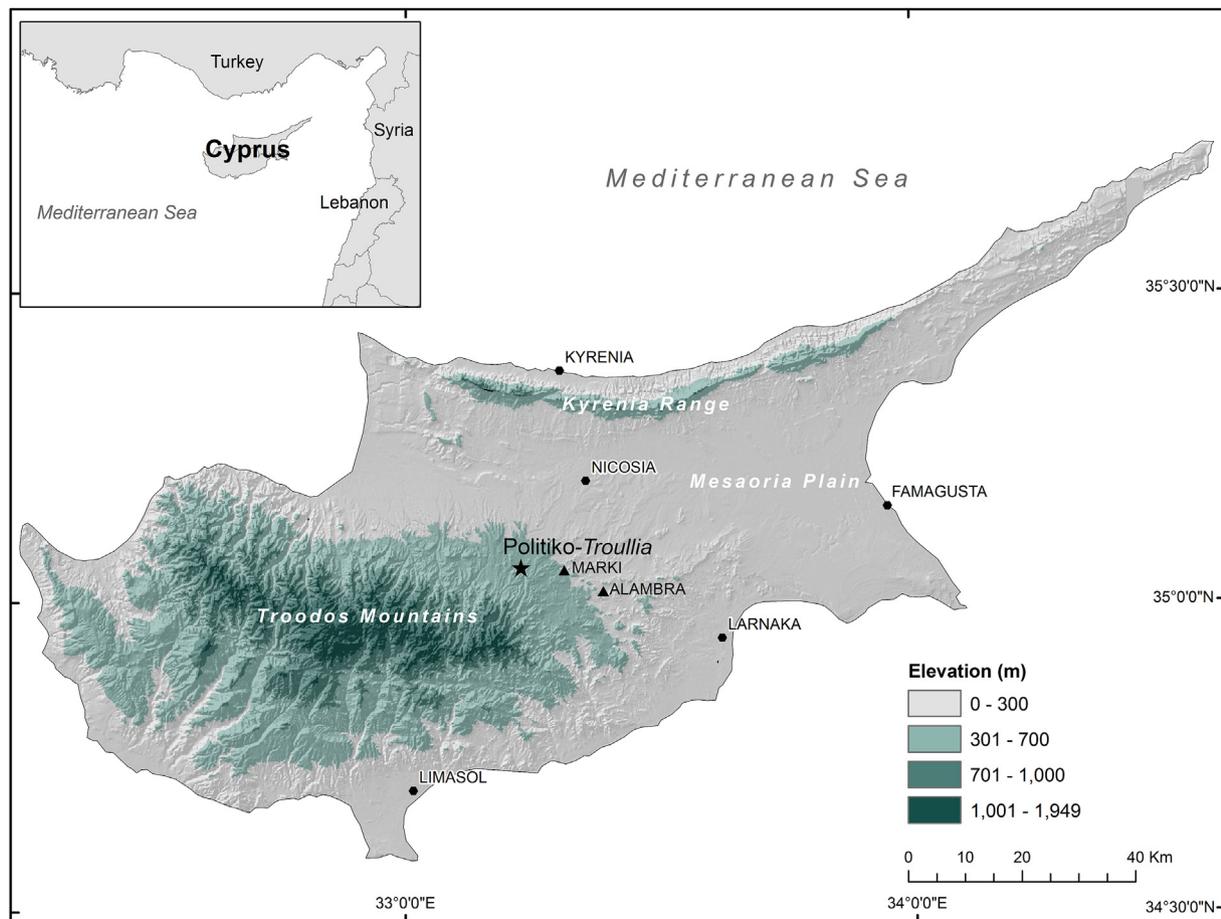


Fig. 1. Map of Cyprus in the eastern Mediterranean. The location of the Middle Bronze Age archaeological site of Politiko-Troullia is marked with a star.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات