



Malta: Submerged Landscapes and Early Navigation

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Timmy Gambin

Abstract

The island of Malta is best known for its spectacular stone temples built by Neolithic farmers about 6000 years ago, who traded regularly with Sicily and other areas in the central Mediterranean. At a distance of over 100 km to the nearest continental land mass, it is generally assumed that Malta was uninhabited before the Neolithic period and was then occupied by competent Neolithic seafaring colonists. However, radiocarbon-dated pollen assemblages from fluvial sediments indicate an earlier phase of Maltese prehistory that preceded the period of the temple builders and included agriculture at a time when sea level was c. 6 m lower than the present day. These submerged coasts would have served as landing places for early navigators and offered fertile land nearby, but they have not yet been subject to systematic underwater archaeological survey. There is also the possibility of even earlier habitation at a time when Malta was connected to Sicily by dry land.

Keywords

Neolithic · Seafaring · Megalithic monuments · Submerged landscapes

17.1 Neolithic Sea Connections

The Maltese archipelago lies 96 km and 290 km from the closest points in Sicily and Northern Africa, respectively (Fig. 17.1). The two largest islands, Malta and Gozo, are presently inhabited. There are no mountains, and the highest point is 253 m above present sea level. Geologically, the islands are part of the European mainland, and at the time of the Last Glacial Maximum, some 20,000 years ago, a large land bridge connected them with south-western Sicily.

Currently, the earliest archaeological evidence for human presence in Malta comes from the cave site of Char Dalam in the south of the island, where deposits dated by radiocarbon to c. 7000 cal BP contain pottery with close decorative parallels to the Neolithic habitation at Stentinello in south-eastern Sicily (Trump 2002, p. 46). At Skorba, archaeological remains from the same period were described as a ‘substantial wall [...] that does not look like the work of pioneer colonists but of a well-established farming community’ (Trump 2002, p. 23).

During the late Neolithic period, c. 6100–4500 cal BP, sometimes referred to as the Temple Period, the inhabitants of Malta developed a cul-

T. Gambin (✉)

Department of Classics and Archaeology,
Archaeology Centre, University of Malta,
Msida, Malta
e-mail: timmy.gambin@um.edu.mt

Fig. 17.1 Sites and geographical areas mentioned in the text. The 120 m depth contour is roughly equivalent to the coastline when sea level was at its lowest at the Last Glacial Maximum, while the 20 m contour represents a time somewhat prior to the currently known earliest traces of human activity on Malta. Drawing by Moritz Mennenga



ture that is best known for its spectacular ‘temples’ built of large worked and decorated stones (Evans 1971; Pace 1996; Ugolini 2012) (Fig. 17.2). At least 26 such megalithic monuments have been discovered, and UNESCO has declared the surviving structures as a World Heritage Site. Many of them are located in prominent positions that overlook natural harbours and have commanding views over the sea. Since the sea level of that period was approximately the

same as today, this topographic situation also applies to the period when the monuments were erected and used (Fig. 17.3). Their distribution in the landscape points to the importance of open-sea navigation and to access points leading to and from the sea (Grima 2004).

There is ample evidence for Malta’s connectivity with various other parts of the central Mediterranean during the Temple Period. This includes a variety of imported objects and raw



Fig. 17.2 The Mnajdra Temples built close to the cliff edge looking towards the sea. Photo by [Alecstorina93](#), made available under Creative Commons License Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0). <https://creativecommons.org/licenses/by-sa/3.0/deed.en>

materials, for instance, obsidian from both Lipari and Pantelleria, at distances of 159 km and 204 km, respectively (see also Castagnino Berlinghieri et al., this volume). Imports of red ochre, flint and pumice are also represented in the archaeological record of this time. Likewise, miniature axes found in Malta are made from various rocks originating from Calabria in the southern Italian mainland and from Mount Etna on Sicily (Trump 2002, p. 38–41). The presence of a few ‘exotic’ ceramic sherds confirms trade in finished goods originating from Sicily (Trump 2002, p. 211).

17.2 Predecessors

The arrival of agriculture and the demonstrable maritime activities of the subsequent periods took place when sea level was as much as 6 m lower than present (Lambeck et al. 2011; Furlani

et al. 2013, 2017). It is therefore possible that some of the earliest farming and navigation activities would have involved the use of coastal areas that are now submerged. The existence of inundated archaeological sites and therefore of significant research potential in the field of submerged prehistory around the Maltese islands can thus be assumed. In fact, pollen analyses of radiocarbon-dated samples from fluvial sediments have recently provided important evidence for agricultural activity in the form of traces of cereals prior to the Temple Period as early as 7200 cal BP (Marriner et al. 2012; Djamali et al. 2013).

To date, research on early Maltese prehistory has focused on the Late Neolithic monuments and other terrestrial sites such as burials (Pace 2004). Due to this emphasis, evidence of possible earlier periods of habitation, which could have been characterized by sites and items of a less spectacular nature, may have been overlooked.

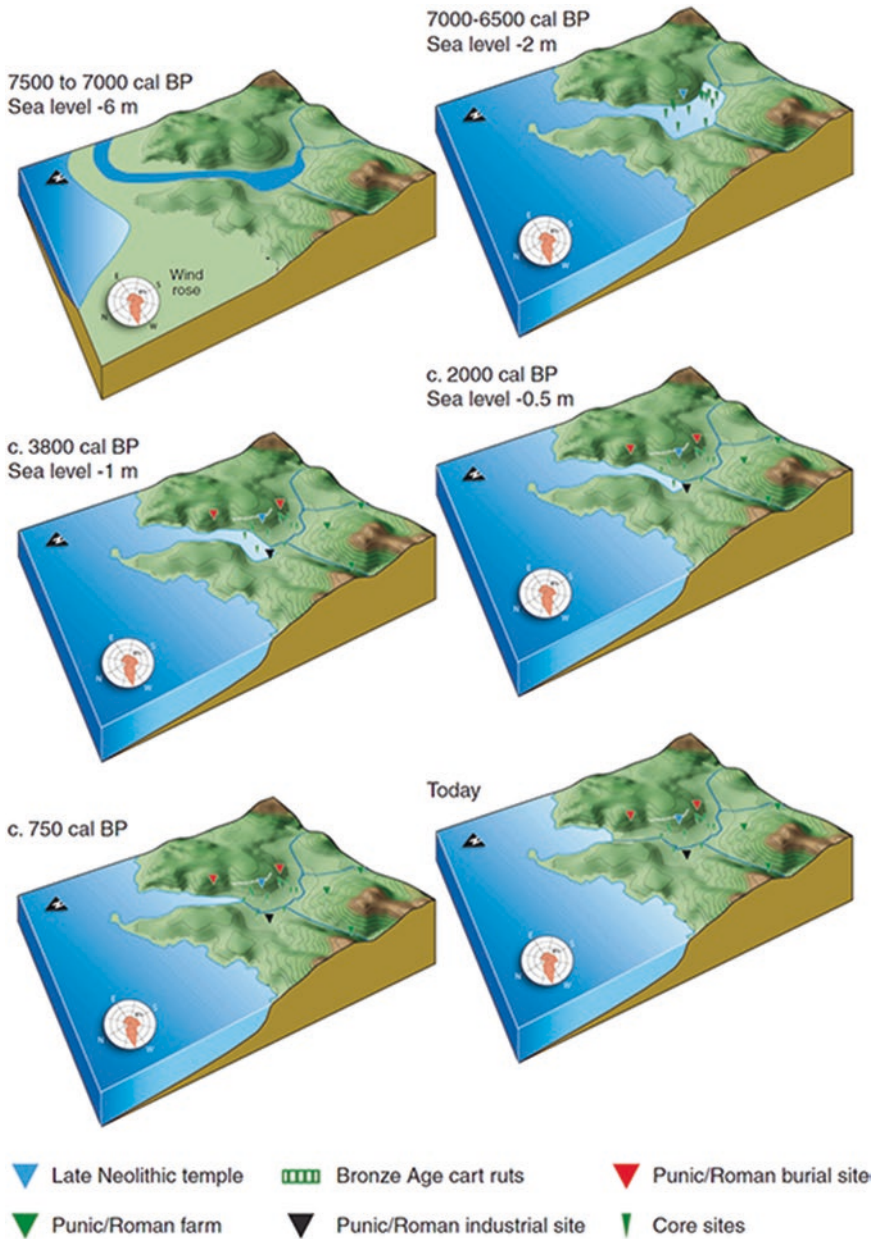


Fig. 17.3 Landscape changes due to sea-level rise and deposition of river sediments at Burmarrad. Traces of intensive land use (farming) have been found in up to 7200-year-old marine sediments below the present river plain. The information on sea-level change and the silting up of the low-lying areas is based on data from the geological core sites shown with green symbols. Drawing by Timmy Gambin with information from the Paleomed Project

Farmers make much stronger imprints in pollen diagrams than do fishermen and hunter-gatherers. This could be one reason for the current lack of traces of preagricultural inhabitants in the

pollen diagrams from the islands. Should pre-Neolithic people have inhabited the area, however, there is little doubt that the most attractive foraging grounds would have been in coastal

lowlands around large bays and estuaries that are today submerged under many metres of water. To date, very little research on this specific field has been done.

17.3 Potential Research Areas

Malta has a long tradition of underwater archaeology focused on more recent millennia, primarily remains of ancient shipwrecks as well as other remains datable to the historical period (Azzopardi and Gambin 2012). Systematic searches for submerged Stone Age sites have not yet been attempted. However, the reconstructed topography of the submerged coastal zone during this period shows plains and rivers that may have been conducive to human settlement (Fig. 17.3). Today, these areas are covered by thick marine sediments as well as by dense mattes of *Posidonia oceanica* (Fig. 17.4). This cover of *Posidonia*



Fig. 17.4 *Posidonia oceanica* vegetation in different stages of development. The thick mass of vegetation to the right, known as a matte, is approximately 6 m in height, concealing any archaeological material that may be present on the seabed. Photo by Timmy Gambin

mattes probably has positive effects on the preservation of archaeological deposits. However, at the same time, it reduces the potential outcome of visual archaeological inspection. Given the presence of Upper Palaeolithic sites such as San Corrado, Grotta Giovanni and Canicattini Bagni in south-eastern Sicily (Bietti 1990), it would be reasonable to assume that similar remains may yet be found in submerged landscapes off the northern coasts of Malta and Gozo.

Other areas may be more profitable in the archaeological search for traces of preagricultural and Early Neolithic habitation – that is, the Stone Age estuarine floodplains. The inner margins of these are present in the modern landscape, but the lower reaches of these palaeoestuaries are located below sea level and covered by very deep marine sediments from later periods (Fig. 17.3). The anaerobic nature of sediments in such geological settings provides the ideal context for the survival of organic materials such as wood and raises the possibility of finding, amongst other artefacts, remains of prehistoric watercraft that may have been abandoned in the estuaries.

An ongoing large-scale offshore remote-sensing project sheds light on the extensive submerged landscape, which existed around the Maltese islands prior to the rise in sea level (Micallef et al. 2013). Although collected primarily for geological purposes, these data have identified ancient rivers, palaeoshorelines, sinkholes and submerged caves, all areas of high potential for future underwater archaeological research, and these provide a valuable basis for the preparation of underwater surveys.

17.4 Management of the Underwater Cultural Heritage

The Superintendence of Cultural Heritage is responsible for the protection, conservation and promotion of cultural heritage, and Heritage Malta for the management of cultural heritage sites. Research and training are undertaken by the University of Malta.

References

- Azzopardi E, Gambin T (2012) *Archaeology and the sea in the Maltese islands*. Midsea Books, Malta
- Bietti A (1990) The Late Upper Paleolithic in Italy: an overview. *J World Prehist* 4(1):95–155
- Djamali M, Gambin B, Marriner N, Andrieu-Ponel V, Gambin T, Gandouin E, Lanfranco S, Médail F, Pavon D, Ponel P, Morhange C (2013) Vegetation dynamics during the early to mid-Holocene transition in NW Malta, human impact versus climatic forcing. *Veg Hist Archeobotany* 22(5):367–380
- Evans JD (1971) *The prehistoric antiquities of the Maltese islands, a survey*. Athlone Press, London
- Furlani S, Antonioli F, Biolchi S, Gambin T, Abela R, Anzidei M, Devoto S, Lo Presti V (2013) Late Holocene relative sea level changes in Malta. *Quat Int* 288:146–157
- Furlani S, Antonioli F, Gambin T, Abela R, Ninfo A, Zavagno E, Micallef A, Cucchi F (2017) Marine notches in the Maltese islands (central Mediterranean Sea). *Quat Int* 439(Part A):158–168
- Grima R (2004) The landscape context of megalithic architecture. In: Cilia D (ed) *Malta before history*. Miranda Publishers, Malta, pp 327–345
- Lambeck K, Antonioli F, Anzidei M, Ferranti L, Leoni G, Scicchitano G, Silenzi S (2011) Sea level change along the Italian coast during the Holocene and projections for the future. *Quat Int* 232:250–257
- Marriner N, Gambin T, Djamali M, Morhange C, Spiteri M (2012) Geoarchaeology of the Burmarrad ria and early Holocene human impacts in western Malta. *Palaeogeography, Palaeogeogr Palaeoclimatol Palaeoecol* 339–341:52–65
- Micallef A, Fogliani F, Le Bas T, Angeletti L, Maselli V, Pasuto A, Taviani M (2013) The submerged paleolandscape of the Maltese islands: morphology, evolution and relation to Quaternary environmental change. *Mar Geol* 335:129–147
- Pace A (1996) *Maltese prehistoric art 5000–2500 BC*. Fondazzjoni Patrimonju Malti, Malta
- Pace A (2004) The sites. In: Cilia D (ed) *Malta before history. The world's oldest freestanding architecture*. Miranda Books, Malta, pp 42–211
- Trump DH (2002) *Malta: prehistory and temples*. Midsea Books, Malta
- Ugolini LM (2012) *Malta: origins of Mediterranean civilization – a re-edition with a foreword and an Introduction by Pessina, A. and Vella, N.C. with an English translation by Scerri L.J.* Midsea Books, Malta

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