

DEFINING AND DETECTING MEDITERRANEAN
DEFORESTATION, 800 BCE TO 700 CE

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THE PROBLEM

Did the ancient Mediterranean world experience real deforestation?* Opinion is divided.¹ In this paper I shall first attempt to clarify the problem (definition is essential), describing the destructive forces that were at work in the period from the rise of the Greek *polis* to the first phase of the Muslim conquests. I shall then consider the evidence for possible shortages of fuel-wood and construction wood, and make some comments on the markets in each of these classes of commodity. Next I shall briefly review the most pertinent evidence provided by pollen analyses and by alluvial sedimentation. I shall evaluate a recent discussion based on demography. I shall attempt to demonstrate that the reason why the effects of heavy demand for wood were not more severe was probably active woodland management combined with an effective system of distribution. Finally I shall consider the likely effects of known climate changes.

The substantive problem of deforestation arises here from the fact that the Greeks, Romans and other peoples of the Mediterranean certainly used and destroyed great quantities of trees. In the period 800 BCE to perhaps 165 CE, they cleared huge amounts of arable land. They were always very heavy consumers of timber: under the Roman Empire especially, the demand was heavy both for fuel wood (including fuel for the production of metals and glass), and for timber to be used for innumerable kinds of building and manufacturing. From ships to writing tablets, from spears to ploughs, almost everything was made of wood. The vast majority of fuel was wood,² often in the form of charcoal, and cremation was widespread until at least the second century CE. Those who do not believe that all this

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¹ See Harris 2011a, 108.

² But see Veal in this volume, p. 37.

wood use had severe effects on Mediterranean woodlands have to emphasize that woodlands, in temperate climates at least, can regenerate themselves.³

Both periodization and definition are crucial to what follows. Periodization first of all: people began clearing tree-covered land during the Neolithic, and the larger kind of settlement could have serious consequences. Investigators of a key site in Jordan, for instance, have written of ‘dramatic local deforestation’ before 4500 BCE.⁴ By the third millennium BCE pharaohs were importing timber to Egypt by sea.⁵ Bronze Age changes in the environment have been widely recognized across the whole region. By 800 BCE, at all events, Mediterranean lands, especially in the east, are likely to have been much less tree-covered than they were at the beginning of the Holocene, though there is no way of quantifying this change. Population and economic production then intensified from the eighth century BCE till the second or third century CE—and what that did to Mediterranean woodlands is the primary subject of this paper.

What happened demographically and to production later on, say from 200 to 700 CE, is hotly disputed; I shall hypothesize here that by 450 both population and production had greatly decreased in Mediterranean Europe but less so in the eastern and North-African parts of the Mediterranean zone. And there is no natural cut-off point in the seventh century either. Thus the period discussed in this paper, while it consists of a time of intensified timber use, was neither preceded nor succeeded by periods of zero demand; far from it. We must also remember that demand for wood could rise and fall dramatically in particular regions independently of the trends I have been describing: Attica, for example, and some other parts of Greece too, were substantially denuded of tall trees in the era of Athenian naval power in the fifth and fourth centuries BCE, but Attica seems to have recovered to a notable extent when Athens lost its independence and its fleet.⁶

³ See Rackham 1996, etc. Much depends, naturally, on the local climate and geology, on how the land is treated (whether for example it is used for pasturage), and on the species in question (cedar forest, for instance, takes centuries to regenerate: cf. Rauh et al. 2009, 267). Conifers in general require reseedling/replanting from scratch.

⁴ Aïn Ghazal, just north of Amman: Fall et al. 2004, 143; the climate was too arid to allow woodlands to renew themselves effectively.

⁵ Gardiner 1961, 42, Polzer 2011, 351.

⁶ Harris 2011a, esp. 123; Harris 2011b.