

Environmental Issues in the Roman World

II: Deforestation

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The deforestation of the Mediterranean is one of the saddest tales in that region's troubled ecological history. Renaissance navies, the use of railways to extract lumber from remote regions, and the continuing demand for pulp and paper have all played a role in this tragedy. The extent to which forests were depleted in ancient times, however, remains controversial. Since many of our literary sources either ignore the problem or merely allude to it in passing, we are able to form only an imperfect idea of the damage and its impact.

There can be no doubt that the forests of antiquity were far more extensive than at present. The uninformed observer would hardly guess from today's meagre population of fir trees in Italy that the Apennine mountains were once teeming with this tall conifer, prized by the Romans in the construction of ships and large buildings. Though some deforestation is attested under the Republic, both Strabo and Dionysius of Halicarnassus record that Italy was still well forested in the Augustan age. Corsica and Macedon had their mountain pines, Lebanon and Cyprus their cedars. Further west, Atlantic humidity fostered the growth of dense forests in Gaul and Spain. The Seine basin was covered in woodland, while the Ardennes forest extended over most of northeastern Gaul. Readers of Caesar's Gallic Wars, or Tacitus' account (Annals 1.61-62) of the ambush of Varus' three legions in the Teutoburgian Forest, will recall the dark and perilous thickness of these woods. The Pyrenees, too, "contain many thick and deep forests", according to Diodorus of Sicily (who

wrongly derives their name from the Greek word for forest fire!); but already Strabo records lumberjacks there, and says that the Gallic side of the Pyrenees was denuded. Spain was so heavily forested that, according to legend, a squirrel could travel from Gibraltar to the Pyrenees without touching the ground. Strabo describes the thick woods and tall trees of the Sierra Nevada, and the repeated mention of acorns as food for man and beast implies an abundance of oaks. Britain, too, is depicted as overgrown with forests.

To appreciate the depletion of ancient forests it is necessary to realize the great demand for wood and wood products in the days before coal furnaces and steel girders. Wood was the major source of energy until the eighteenth century. Wood and charcoal were used for cooking, heating, industry, cremation, and the baths. Wood formed the frames and doors of houses and the roofs even of stone buildings. Woods such as citrus and maple were used for furniture. Tool handles, wine barrels, sometimes even columns and statues were made of wood. In industry, fires were essential for tanning, smelting, baking, and pottery kilns. The quantity of wood required is suggested by a parallel from fourteenth-century Dijon, where the fuelling of six tile kilns employed 423 woodcutters and 334 drovers to haul the wood.

Large quantities of timber were consumed for military purposes. Roman army camps were built of timbers, and wood was also needed for wagons, bridges, engines of war, and the shoring-up of siege-works. Both Caesar and Lucan describe the complete

deforestation of the Marseilles region to build boats and engines for the siege of Massilia: "All the woods far and wide were levelled to the ground and the forests were stripped of their oak". The army also resorted at times to the wasteful practice of lighting forest fires to terrify, annihilate or flush out the enemy. Naval vessels likewise used up much of the best timber; and we should not forget their more numerous civilian counterparts, the merchant ships and river barges.

A final cause of deforestation was agriculture. The expanding population and insatiable nourishment demands of the Roman state led to massive reclamation of previously uncultivated terrain. Forest land was especially prized because the soil was rich from the buildup of decomposed leaves. Lucretius in the first century B.C. records how "men constantly forced the woods to recede higher up the mountains and to surrender their lower slopes to cultivation". In North Africa, whose pine forests once supported the Carthaginian fleet, an inscription records the Imperial policy of reclaiming all unused land for grain, olive and vine production, and Tertullian (around A.D. 200) confirms that the woods and other wilderness areas of Africa had yielded to the plough. The third-century emperor Galerius greatly increased agrarian land in Pannonia (roughly equivalent to Hungary) by cutting down entire forests.

Wood is an expendable resource, and unrestrained logging eventually leads to a shortage. If Plato in the Critias was already complaining about deforestation near the Athens of his day, we can readily imagine the heightened problem in the Roman period. The cedars of Lebanon, already exploited by Egyptians, Assyrians and Phoenicians, were used for Marc Antony's fleet and possibly for the wooden roof of the famous Temple of Jupiter at Baalbek; only a few

small groves survive today. The island of Elba was so stripped of trees that its iron ore had to be shipped to the mainland for smelting. In the Late Empire, firewood was so scarce in Italy that it had to be imported from Africa (presumably from the forests being cleared for farming!) and the emperor personally assumed responsibility for its supply. The poet Sidonius, while praising the emperor Majorian in 458 for building a fleet to combat the Vandals, snidely observed that the Apennines from which the timber was obtained were already "too heavily deforested on either slope in ages past". Of the famed Mediterranean pines, only inferior descendants remain. (The fully manned trireme launched in Greece this summer had to be built with Oregon pine!) More serious than the wood depletion was the erosion which followed. Topsoil, no longer held in place by tree roots, was washed from the mountains by rain and clogged the river mouths, creating marshes infested with malarial mosquitoes. The Greek island of Anticythera, whose forests made it a prominent shipbuilding centre in Roman times, is now an uninhabited, barren rock. Short-term gain led to long-term pain.

Were the Romans totally insensitive to the need for forest conservation? Accustomed to plentiful wood supplies in early times, the Romans later drew on their provinces when Italian resources were exhausted. Shade trees and fruit trees were planted, but reforestation seems never to have been contemplated. However, some attempt was made to establish forest reserves. Cicero in 63 B.C. opposed sale of the state-owned Scantian forests to entrepreneurs, and the consuls of 59 were initially assigned "forests and cattle routes" as their provinces. Certain woodlands, we are told, were earmarked for the supply of timber to repair public buildings, and Hadrian reserved for himself four species of tree in Lebanon, which

could not be cut without permission. Moreover, preserved fragments of colonial charters restrict the sale and leasing of public woods, and forbid the grazing of goats on land where saplings are growing. Such

"band-aid solutions", however, did little to ease the overall problem.

Further Reading: R. Meiggs, Trees and Timber in the Ancient Mediterranean World (Oxford, 1982)