

Controlled Burns and Forest Husbandry in Roman Italy

The Romans were deeply interested in agriculture and ecology, and thanks to the voluminous writings of such as authors and Columella and Pliny the Elder we are fortunate to know much about ancient ecological practices. This paper will argue that despite this deep interest in agriculture, the Romans never developed the same interest in silviculture, despite having at the ready several tools to ensure forest vitality.

One of the most common modern tools to promote forest health and to contain naturally occurring wildfires is prescribed fire, otherwise known as controlled burns. Such burns reduce flammable underbrush, encourage the growth of native plants, and benefit species that depend on periodic fires. The Romans knew of this practice, but applied it only to the creation of farmland and to improve livestock grazing. The ‘slash-and-burn’ technique of pasture-creation, where vegetation, including trees, was cut down and then burned in situ, was especially wide-spread; Pliny the Elder (*Nat.* 17.4) and Columella (6.23) both recommend the practice, and Vergil (*G.* 1.87-8) claims that through the burning of fields “every imperfection is cooked out through fire, and the unneeded moisture sweats out” (cf. *A.* 405-9).

In each of these references, however, the authors must be referring only to the burning of already existing farmland or pastureland, or the creation of new pastureland, and not to the controlled burning of wooded areas. The naturalists do describe in detail some facets of agroforestry, for example the use of trees as living trellises, for apiaries, and for intercropping (sources collected in Lelle and Gold 1994), and Cato noted that wooded land was one of the nine requirements for a good farm (*Agr.* 1.7). But the sources are in general silent on forest fires, which are usually denoted by the term *incendium silvarum* (e.g. *Lucr.* 1.903; *Curt.* 6.6.31; *Sen. Ep.* 90.12, *Nat.* 2.21.362; *Luc.* 3.420; *Gel.* 19.9.13), though they were not entirely unknown.

Vergil (A. 12.521-5), for example, uses a forest fire as a metaphor for battle, and the setting of forest fires was used as a weapon against invading armies (e.g. Thuc. 3.98.2-3; 4.30.2-3), but we do not know whether there was any consideration of how to control such fires, or whether these fires were strategically set to avoid population centers. In the *Laws* Plato calls for a fine for anyone who sets fire to their own woods and allows it to burn a neighbor's property (*Leg.* 8.843e), which seems to imply that it was possible for landowners to control fires set for agricultural purposes, though it is likelier that Plato is referring to controlled burns of existing pastureland.

How then, did the Romans contain forest fires? It seems that they did not; at least, the popular imagination depicted forest fires as uncontrollable forces. In Florus' famous metaphor (*Epit.* 1.18.2), Roman expansion after the conquest of Italy was stopped at the Strait of Messina "like a fire, which, having destroyed the woods that lay in its way, is stopped by an intervening river" (*more ignis qui obvius populatus incendio silvas interveniente flumine abruptitur*). A similar passage is found in Silius Italicus (7.359-361), where a fire set by Hannibal to distract Fabius Maximus is described as unstoppable (*nusquam stante malo*).

It seems, then, that the Romans did not engage in systematic forest husbandry, let alone employing prescribed fire as one method to ensure forest vitality. Why then did they limit the use of prescribed fire to the creation and maintenance of grazing and farming areas, and to the improvement of agricultural yields? The answer may lie in the systematic deforestation of Italy during the Middle and Late Republic. The Romans were well-aware of the problems caused by deforestation, and viewed it, and the resulting ecological damage, as a man-made problem (Yeo 1948). Even though the Romans were concerned with the problems related to rampant deforestation, they do not seem to have given much consideration to forest conservation aside

from designating certain areas as sacred groves (Ulrich 2007: 263-5). But with a rapidly growing population and ever-increasing need for pastures and grain, the problems of deforestation became more acute, while the threat posed by *incendia silvarum* lessened, thus eliminating the need for sustainable silvicultural practices and institutional practices of fire suppression.

Bibliography

Hughes, J.D. 1984. "How the ancients viewed deforestation." *Journal of Field Archaeology* 10.4: 435-45.

Lelle, M., and M. Gold. 1994. "Agroforestry systems for temperate climates: lessons from Roman Italy." *Forest & Conservation History* 38.3: 118-26.

Ulrich, R. 2007. *Roman Woodworking*. New Haven: Yale University Press.

Yeo, C. 1948. "The overgrazing of ranch-lands in ancient Italy." *TAPA* 79: 275-307.