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## Fire and first olive cultivation: a new high-resolution macro-charcoal record from the Sea of Galilee, Israel

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Throughout the Mediterranean biome, fire has been a dominant natural agent of change and a primary tool for anthropogenic landscape modifications. This research explores linkages among fire, vegetation, and human agricultural practices in the Eastern Mediterranean region, a region with limited evidence of the role these processes have in shaping the landscape.

Olive horticulture is among the oldest and most widespread agricultural forms in the Mediterranean Basin. The first major olive cultivation can be traced back in time with pollen evidence. In the Sea of Galilee, the earliest palynological evidence for olive horticulture suggest cultivation began approximately 7000 cal yr BP.

Here, we present a new high-resolution macro-charcoal dataset from the Sea of Galilee prior and during the first olive cultivation. Charcoal morphotypes were identified and are used to characterize fuel types. We also compare our data with a new multi-proxy dataset from the same record indicating the timing and impact of olive cultivation and related vegetation and climate changes.

The following questions are discussed: What was the natural fire regime (pre-large scale agriculture) around the Sea of Galilee basin? What role did fire play as a potential tool for clearing and fertilizing landscapes as the first olive orchards developed? How did fire regimes change once olive orchards were planted? Finally, can charcoal morphotypes provide novel insights into understanding paleofire regimes?

This study allows a new perspective into natural fire regimes in the Levant and an increased understanding of the role of fire during early horticulture practice. Moreover, it can serve as a basis for future fire management plans.