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Vegetation and climate dynamics in the borderlands of the Aegean Sea during the last deglaciation deduced from marine and terrestrial pollen records

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Located in a position between the NAO-influenced higher-latitude and the monsoonally-influenced lower-latitude climate systems, the Aegean region is particularly sensitive in recording climate change and its imprint on terrestrial ecosystems. Here we present palynological data from a terrestrial and a marine core from the Aegean region with a mean temporal resolution of ∼60 yr in order to identify the driving forces behind short-term vegetation and climate changes during the interval from 20 kyr BP until 7 kyr BP.

Changes in moisture availability appear to have been the major factor controlling vegetation dynamics during the analyzed interval. Until ∼14.6 kyr BP, steppe vegetation indicative of dry conditions dominated the borderlands of the Aegean Sea. Subaerially exposed shelfal areas were covered by a *Pinus*-dominated vegetation until the flooding through meltwater pulse MWP-1A. During the Bølling/Allerød interstadial complex, moisture ability was higher than during the preceding interval, while the following Younger Dryas was almost as dry as the late Pleniglacial. Subsequently to the Younger Dryas, both pollen records indicate a centennial-scale vegetation setback at ∼11 kyr BP, which is probably the expression of the 11.2-kyr event known from Greenland ice cores and recently described from Central Europe. We propose that this event contributed to the delay of the Holocene reforestation in the Aegean region until ∼10.4 kyr BP. The 11.2-kyr event and further pronounced climate deteriorations from

the onset of the Younger Dryas until the middle Holocene seem to have occurred in a 1500-yr cyclicity. The vegetation signals from the northern Aegean region show a close temporal correlation with Greenland ice cores, indicating a strong teleconnection between the high and the lower latitudes for the analyzed interval.