



## **Last Glacial vegetation and climate change in the southern Levant**

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Reconstructing past climatic and environmental conditions is a key task for understanding the history of modern mankind. The interaction between environmental change and migration processes of the modern *Homo sapiens* from its source area in Africa into Europe is still poorly understood. The principal corridor of the first human dispersal into Europe and also later migration dynamics crossed the Middle East. Therefore, the southern Levant is a key area to investigate the paleoenvironment during times of human migration.

In this sense, the Last Glacial (MIS 4-2) is particularly interesting to investigate for two reasons. Firstly, secondary expansions of the modern *Homo sapiens* are expected to occur during this period. Secondly, there are ongoing discussions on the environmental conditions causing the prominent lake level high stand of Lake Lisan, the precursor of the Dead Sea. This high stand even culminated in the merging of Lake Lisan and Lake Kinneret (Sea of Galilee).

To provide an independent proxy for paleoenvironmental reconstructions in the southern Levant during the Last Glacial, we investigated pollen assemblages of the Dead Sea/Lake Lisan and Lake Kinneret. Located at the Dead Sea Transform, the freshwater Lake Kinneret is nowadays connected via the Jordan with the hypersaline Dead Sea, which occupies Earth's lowest elevation on land. The southern Levant is a transition area of three different vegetation types. Therefore, also small changes in the climate conditions effect the vegetation and can be registered in the pollen assemblage.

In contrast to the Holocene, our preliminary results suggest another vegetation pattern during the Last Glacial. The vegetation belt of the fragile Mediterranean biome did no longer exist in the vicinity of Lake Kinneret. Moreover, the vegetation was rather similar in the whole study area. A steppe vegetation with dwarf shrubs, herbs, and grasses predominated. Thermophilous elements like oaks occurred in limited amounts. The limiting factor for tree growth was precipitation. Consequently, the precipitation gradient was not as strong as today, and semiarid conditions prevailed in the southern Levant during the Last Glacial.

Our study will contribute to the overall aim to reconstruct the way of modern humans to Europe and to understand the complex connection between climate and vegetation change in the Eastern Mediterranean.