

Interactive comment on “Vegetation history and palaeoclimate at Lake Dojran (FYROM/Greece) during the Late Glacial and Holocene” by Alessia Masi et al.

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Reviewer: This paper is an important addition to the study of the vegetation history and paleoclimatology of the Balkans in the Holocene. It presents new pollen data and compares to other proxies produced by some of the authors and published previously. The authors' main findings are that there was a rise in arboreal vegetation at the beginning of the Holocene but that it takes a couple of millennia to be definitively attested. This supports the findings of many previous studies from the Mediterranean region. The fact most taxa are present at the bottom of the core suggests a glacial refugia in the catchment. They also find very interesting first signs of human presence 5ka

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(cereal pollen) and then various human impacts through the next few millennia. The methodology and interpretation is robust, there are new findings that are of interest to the community, and it is generally well written with good quality figures, so I recommend this for publication if the following points are considered (especially in the discussion). While I feel the interpretations are sound and the stories interesting, the authors could expand on the work by comparing their results and findings more to other studies and thinking about the wider implications and underlying climate dynamics that may have caused the observed changes. E.g.:

Authors: WE THANK THE REFEREE #2 FOR USEFUL AND CONSTRUCTIVE COMMENTS. PLEASE FIND OUR REPLIES BELOW.

R: 1. The authors do compare their results to those from further afield e.g. Italy and Greece. However, there are very similar patterns of slow arboreal pollen increase even further afield e.g. in central and eastern Turkey (Van, Eski) too – may be worth discussing this and how all across the Balkans and eastern Mediterranean this slow increase is being picked up, and what this tells us about what was happening with climate/vegetation change.

A: WE WILL INCLUDE THE SUGGESTED RECORDS IN THE DISCUSSION

R: 2. More discussion of why there is no response in the pollen record to the 8.2ka event would be good – you talk about the lack of response in the pollen record, which is really interesting – but it would be nice to hear some thought on why there was no response, when there was in e.g. Tenaghi Philippon's pollen record (Pross et al., 2009).

A: AUTHORS, FOLLOWING REFEREE'S SUGGESTION, WILL COMMENT MORE IN DETAIL THE 8.2 EVENT

R: 3. "Athanasiadis et al. 2000 provided pollen results for littoral cores from Lake Dojran covering the last 5000 years" – could you compare your pollen record to theirs? Are there differences?

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A: WE COMPARED MORE IN DETAIL OUR RECORD WITH THE ATHANASIADIS ONES EVEN IF A DETAILED CHRONOLOGY IS MISSING AND THE COMPARISON CANNOT BE MADE IN DETAIL. SOME SIMILARITIES/DISSIMILARITIES ARE ANYWAY EVIDENCED

R: 4. In the results section 4.3, you talk about how several different proxies indicate increasing humidity in this pollen zone, but the diatom assemblage data suggest relatively shallow waters – it would be nice to offer some reasons for this discrepancy (even if these are discussed in the Zhang et al. paper already).

A: WE WILL TRY TO ADD COMMENTS ON THIS

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