

Interactive comment on “A 22 570 yr record of vegetational and climatic change from Wenhai Lake in the Hengduan Mountains biodiversity hotspot, Yunnan, Southwest China” by Y. F. Yao et al.

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(1) Comments from Referee #1 In general, the review of the article is positive, but major improvements are necessary before the manuscript can be considered for publication: Line 017: Why to mention: “This paper is one of the studies: : ..” This paper and the results must be able to stand alone, it sounds like an excuse! Line 031: I’m a bit astonished that from 9,250 cal. Yr BP to present no major changes were highlighted although Fig. 2 documents noteworthy changes. Line 042: lie seems a not-quite correct term Line 073-076: The statement could be proven within the entire manuscript! Clear

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evidences are missing. Line 103: “densata Mast.” are “also present” Line 153: Results – this is the weakest part of the manuscript in terms of interpretation!! Line 157: there is no “chronological control against which to decipher the vegetation and climate history”. There is only a listing what might have happened within the different Pollen Zones, but an interpretation and/or a comparison to recent conditions is missing!!! Line 278: The discussion and the conclusions have to be improved deeply. The visual differences between Zone 1 and Zone 3 are not so clear, but the “interpretation” of the climate conditions are quite different. Zone 2, in between, shows completely different climatic and vegetative conditions, but there is no interpretation or any comparison to other published studies. According to this, chapter 5 (from Line 278 onwards) has to be improved tremendously. The results and this paper must be able to stand alone in contrast to the authors predication that they “published the first of a series of studies: : :.” Major revisions of the manuscript are necessary.

(2) Author’s response Line 017: We agree with Referee #1 that this paper and the results can stand alone. Line 031: Fig. 2 documents noteworthy changes and major changes from 9,250 cal yr BP to present should be highlighted. Line 042: We agree that “lie” is not a suitable term. Line 073-076: One aim of this paper is to develop insights into the changing floristic diversity and to draw inferences about past climate and anthropogenic influences based on palynological investigation. The other aim is to compare study sites at different altitudes in the region. We agree that clear evidences are missing in this regard. Line 103: We also think the sentence “P. densata Mast. also present” is incorrect. Lines 153, 157, 278: We agree with Referee #1 that the results, discussion and conclusions need to be improved in terms of interpretation.

(3) Author’s changes in manuscript Line 017: The sentence “is one of the studies covering a range of altitudes within this hotspot” has been removed (Line 17 in the revised Ms). Line 031: From 9,250 cal. yr BP to present, the vegetation has been dominated by needle-leaved forest (comprising mainly Pinus, Abies and Tsuga), interspersed with broad-leaved Quercus and Betula, reflecting significant decline of humidity from the

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early Holocene to late Holocene (Lines 48-51 in the revised Ms). Line 042: The term "lie" has been changed to "are located" (Line 59 in the revised Ms). Line 073-076: We aim to use pollen data to develop insights into the changing floristic diversity and to draw inferences about past climate and anthropogenic influences in the region during the Late Quaternary (Lines 107-109 in the revised Ms). Line 103: *P. densata* Mast. are also present (Line 154 in the revised Ms). Lines 153, 157, 278: In the results section, we have deleted "chronological control against which to decipher the vegetation and climate history" (Line 238 in the revised Ms) and made a comparison of pollen assemblage between each pollen zone and surface samples (representing recent condition) (Lines 333-341, 359-366, 381-387, 401-410, 426-431 in the revised Ms.) In the discussion and conclusion section, we have made a detailed comparison with previous studies, particularly in terms of the Last Glacial Maximum and the Younger Dryas (Lines 471-645 in the revised Ms).

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