

Interactive comment on “Effects of vegetation patterns on yields of the surface and subsurface waters in the Heishui Alpine Valley in west China” by Y. Liu et al.

Y. Liu et al.

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Thanks for your valuable suggestions and comments. And we would try our bests to improve quality of our revised manuscript.

Q1 excluding the relevant new figures 5 and 6; and, it is not clear whether Fig. 5 was changed or whether there is an additional Figure, please clarify

R: according to referee1's suggests we have added Fig. 2 ((a) spatial distribution of mean annual AET in the Heishui Valley (b) spatial distribution of mean annual precipitation (modification from Jiang et al. 2004) (c) seasonal dynamics of runoff in the Heishui and Shaba stations) in study areas of the revised manuscript. So the Fig. 5 in the origin manuscript was modified as Fig. 6 in the revised manuscript. And we

recalculated water yield on a unit-area basis (contribution per square kilometer) and reanalyzed relationship between vegetation type coverage and water yield in the Fig. 6, which was explained in details in the first response.

Q2 Effects of precipitation were excluded by choosing a dry period. This is okay, but how long did the dry period last before the samples were taken? I.e. can it be excluded that runoff is unaffected by preceding precipitation events?

R: If we found that there was insignificant variation at the Turbidity and Conductivity by measurement of Turbidity and Conductivity of river water before sampling period, among sampling period and after sampling period, we assumed that the effects of rainfall was not prominent. And in general, we could collect water samples after three days when the rainfall was over.

Q3 Rewrite "paired-watershed analysis" instead of "paired-watershed" (the sentence preceding "Hibbert (1967)").

R: The "paired-watershed" has been corrected as "paired-watershed analysis".

Q4 In response to my earlier question 4 (Q4) the authors write that they focus the study on "the relationship between vegetation pattern and water yield in spatial scale ... during the transition period from low flow to high flow". Has this been stated so clearly in the paper itself?

R: Thank for your suggestions. This has been added in first paragraph of section 3.1 (field sampling) in the revised manuscript, as described below: "In order to reflect the relationship between vegetation pattern and water yield at a spatial scale but not time scale, water samples were collected at the same time within the seven watersheds, which avoided effects of time change and large climate change. Based on the former climatic records, the sampling period was decided in 2004. Maybe, it was a better way to determine the sampling time although it might have some uncertainty. So the few sampling days were representative for the situation during transition period from low

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flow to high flow. And based on the T-test comparison results of mean annual/month precipitation between in 2004 and in 1971 through 2004 and mean annual/month actual evapotranspiration (AET) between in 2004 and in 1980 through 2004, respectively, this year in 2004 was not a particular year but a representative year.”

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