

## Reviewer 2

1. page 1 line 19 different vs contrasted

**Response:** Done as suggested (Page 1.line 19)

2. page 1 line 19 - state the different watershed properties - is it more than slope?

**Response:** In this paper, watershed area is regarded as another factor affecting hydrological responses to forest changes.

3. page 1 line 22 - explain year-wise method or be more general in the description

**Response:** This approach matches years in the reference period with their comparable years in the disturbed period according to their similarities in climate conditions in each watershed. Thus, the hydrological difference between those selected years of two periods can be regarded as the effects of forest disturbance. **Please see our** explanations on Page7. line 16-22 and Page 8. line 1-3.

4. page 1 line 21 - explain concept of hydrologic recovery associated with tree growth

**Response:** Hydrological recovery is defined as the process that hydrological functions in a disturbed watershed are restored toward pre-disturbed condition by forest regeneration. Forests affect water through interception, evaporation, and transpiration etc. After forest disturbance (e.g., forest harvesting), hydrological processes are affected, and then will be gradually recovered with forest re-growth.

5. page 3 line 6 - properties vs. property

**Response:** Done as suggested (Page 3.line 6)

6. page 3 line 12 - define global analysis

**Response:** Thank the reviewer for this concern. We have added descriptions in Page 3. line 5-6.

7. page 3 line 14 - is it climate or weather-there are scale differences

**Response:** It is climate. In forested watersheds, forest change and climatic variability are commonly regarded as two major drivers for influencing hydrological variations.

8. page 3 line 8 "which directly flows into the Yangtze...."

**Response:** Done as suggested (Page 3.line 9)

9. Page 3 line 12 – remove “had” –

**Response:** Done as suggested (Page 3.line 13)

10. Page 3 Line 14 – consider “Forest cover has increased...”

**Response:** Done as suggested (Page 3.line 15)

11. page 4 line 5 consider different vs. contrasted

**Response:** Done as suggested (Page 4.line 6)

12. page 4 line 21 consider "... watersheds are within the subtropical monsoon zone and have a similar precipitation regime."

**Response:** Done as suggested (Page 4.line 22)

13. page 5 line 1 - most vs mostly and also please provide rough proportions for seasonal precipitation

**Response:** Done as suggested (Page 5.line 12)

14. page 5 line 10 "Pingjiang watershed and are 2.3 to 20.1 m<sup>3</sup>/s in the Xiangshui watershed.

**Response:** Done as suggested (Page 5.line 2-3)

15. page 5 line 21 Stream flow data are available from 1957 to 2014 for both watersheds.

**Response:** Done as suggested (Page 5.line 21)

16. page 6 line 16 to end of page font appears smaller

**Response:** We have checked it again. They are consistent with the previous font size (Page 6.line 6 to end of page)

17. page 8 line 2 - median is not capitalized

**Response:** Done as suggested (Page 8.line 2)

18. page 10 line 13 p=0.21 and 0.27 ? How are these p-values associated with a marginally higher median flow?

**Response:** Thank the reviewer for this concern. This statement has been revised to eliminate confusion (Page10. line13).

19. page 10 section 4.3 - would benefit from details on regrowth metrics such as canopy closure or height and a comparison between basins.

**Response:** We agree that such data would be useful for improved comparison. Unfortunately, because our studied watersheds are more than 1000 km<sup>2</sup> with complex terrains and abundant vegetation types, it is very difficult to obtain long-term tree growth metrics.

20. page 12 line 2- s after enhance and reduce –

**Response:** Done as suggested (Page 12.line 2)

21. page 14 - line 2 - what was the positive role for low flows?

**Response:** Thank the reviewer for this concern. In the Xiangshui watershed, the averaged magnitude of low flow in the reforestation period was higher ( $p=0.084$ ) than that in the deforestation period. Thus, we conclude that the low flows after reforestation in the Xiangshui watershed were also improved ( $p<0.1$ ).

22. page 12 line 21-South Africa

**Response:** Done as suggested (Page12. line21)

23. page 12, line 21-However, in humid regions....- as a side comment curious that increase in vegetation leads to greater net precipitation

**Response:** Indeed, hydrological responses may be inconsistent in different climatic regions especially for low flows. Thus, more case studies are needed before a general conclusion between reforestation and low flows can be developed.

24. page 13 line 7 - between the two studied...

**Response:** Done as suggested (Page13. line7)

25. page 14 line 5. Careful with this statement because watershed characteristics/properties such as slope have long been recognized as having a significant influence on runoff.

**Response:** Thank the reviewer for this suggestion. Indeed, slope has long been recognized to have a significant influence on runoff (mean flow). In this paper, we compared streamflow at different percentiles (e.g., 5%, 10%, 50% and 95%) in responses to different watersheds with different slopes.