

## ***Interactive comment on “Socio-hydrologic perspectives of the co-evolution of humans and water in the Tarim River Basin, Western China: the Taiji–Tire Model” by Y. Liu et al.***

**Anonymous Referee #3**

Received and published: 24 December 2013

**General Comments** This paper summarises the development of a large catchment over a period of 2000 years within a socio-hydrology context. The paper attempts to arrange the history into the different stages and some of the discussion presented to contextualise and justify the stages are good. Nevertheless with paper suffers from having so much information available over the long historical period. It would benefit from a rigorous and disciplined approach to presenting the data and discussion. In particular section 3 and 4 should be integrated so that information is neatly presented into the different stages (eg 4 SHS types in section 7). Each stage should have a socio-hydrology focus. I can see that the Taiji-Tire model fits with the discussion presented. However it

C6872

needs to be better integrated into the paper and in particular with the different stages (SHS).

**Specific comments** The change in climate through history is interesting. Being a large catchment, are the authors able to give an indication of the extent to which the climate change was local or did it follow predominantly global trends. Perhaps a comparison with global temperature change.

P12772L20 – wetting signal – the meaning of this term is not clear

P12773L2 – ground water depths increased (??) . . . .

P12773L20 – more explanation required, since the previous paragraph gives some evidence that the water transfer was positive.

P12774L 20 – the term water “centered inner eco-environment” needs rephrasing or explanation

1. Does the paper address relevant scientific questions within the scope of HESS? Yes, this paper presents a useful socio-hydrology case study in a large catchment over a long historical period
2. Does the paper present novel concepts, ideas, tools, or data? The paper provides useful information which advances socio-hydrology. The paper attempts to links the Taiji-Tyre model with the historical development of the catchment in a socio-hydrology context. See also general comments.
3. Are substantial conclusions reached? See point 2
4. Are the scientific methods and assumptions valid and clearly outlined? NA
5. Are the results sufficient to support the interpretations and conclusions? This paper needs to be reorganised so that the discussion and augments align more readily for the reader. See general comments.

C6873

6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? NA
7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Yes
8. Does the title clearly reflect the contents of the paper? Yes
9. Does the abstract provide a concise and complete summary? Yes
10. Is the overall presentation well structured and clear? The paper needs to be restructured, see general comments
11. Is the language fluent and precise? This can be improved. Some sentences clearly need improving, eg. p12763 L21-22, p12765 L25, p12770L9, etc.
12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? NA
13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? No
14. Are the number and quality of references appropriate? Yes
15. Is the amount and quality of supplementary material appropriate? NA

---

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 12753, 2013.