

Interactive comment on “Why is the Arkavathy River drying? A multiple hypothesis approach in a data scarce region” by V. Srinivasan et al.

Anonymous Referee #2

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This paper evaluated potential climate and anthropogenic factors contributing the declining inflow to the Arkavathy River in India, where the data is scarce. Climate factors include rainfall and temperature; anthropogenic factors include groundwater depletion, eucalyptus plantation, and check dam. No trends are identified in rainfall and temperature. Groundwater depletion is analyzed based on recession analysis. Eucalyptus plantation area and the corresponding ET is estimated. The analysis and reasoning are sound. The conclusion (i.e., declining discharge is mainly due to groundwater depletion and eucalyptus plantation) is solid to me. I enjoy reading the paper. My only major suggestion is that the paper can be shortened, for example, Section 1 and Section 2.3. Sections 2.4 and 3.2 may be combined. I also have a few minor comments.s
Line 15 on page 19: “basin undergoing” Section 1.1.2 Data sparseness: The data

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sparseness has two aspects: hydroclimatic data and human intervene data. Human intervene data (e.g., spatially distributed water withdrawal and return flow from agriculture) may be more limited than hydroclimatic data. Line 18 on page 30: “is not a sufficient reason”? Line 9 on page 32: Delete one “TG Halli” Line 10-11 on page 32” Delete “commonly known as TG Halli reservoir” Line 18 on page 32: “storage capacity”? line 6 on page 34: “that” to “than” Lines 9-10 on page 45: The lower envelope is also corresponding to the flow component from groundwater, minimizing quick flow component. Line 14 on page 49: Did the recession parameters (595 and 0.57) change from pre-1970 to post-1970 significantly? Line 3 on page 51: “1.35 km⁻²” Line 14 on page 51: It may be better to say “groundwater pumping and expansion of eucalyptus plantations. . .” because “expansion of eucalyptus plantations” can also contribute to “groundwater decline” indirectly.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 25, 2015.

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