



*Supplement of*

## **Climatic, topographic, and groundwater controls on runoff response to precipitation: evidence from a large-sample data set**

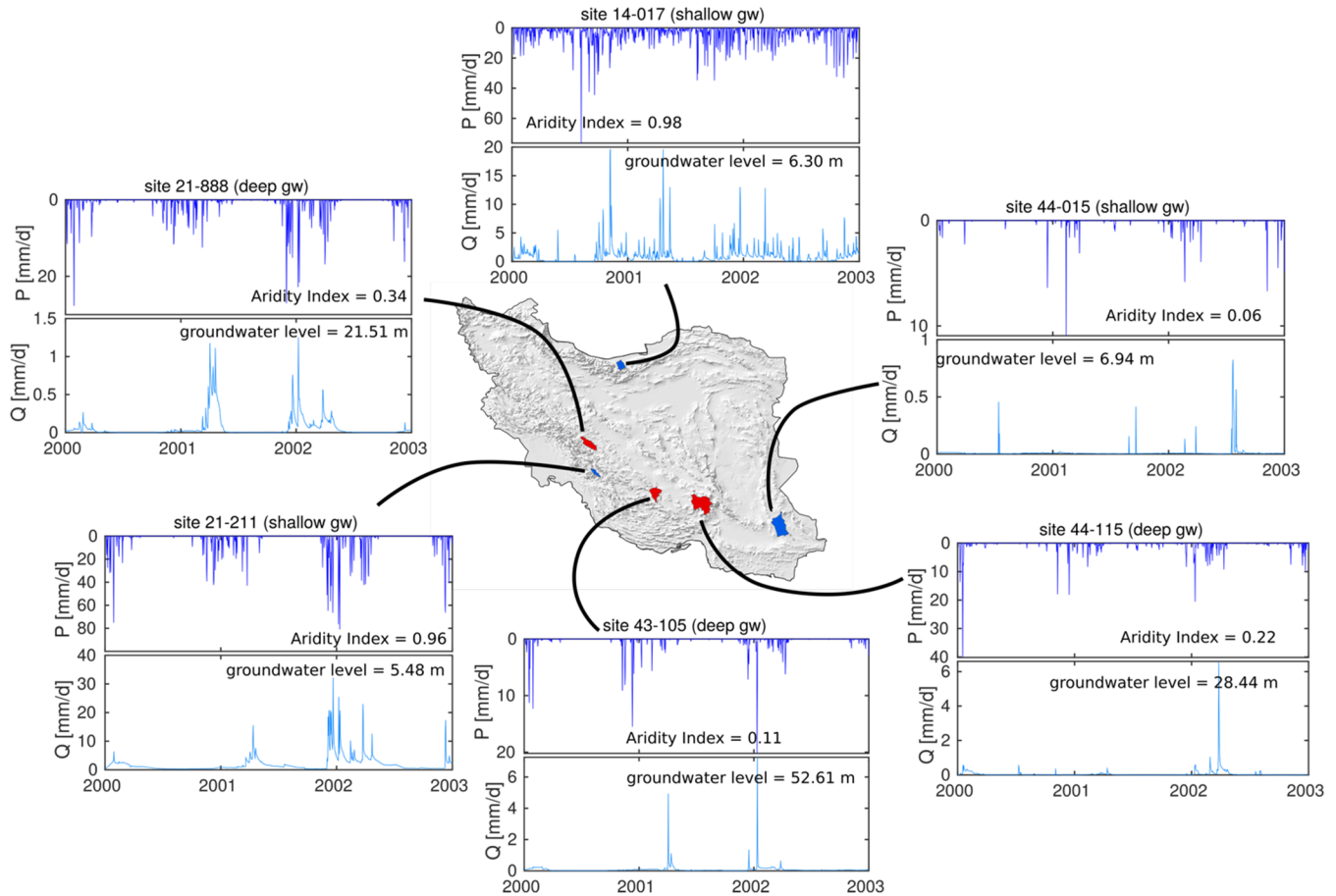
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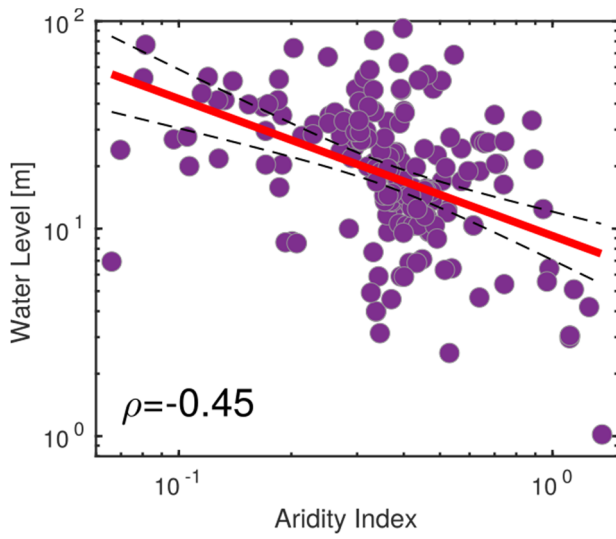
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## Supplementary information S1:

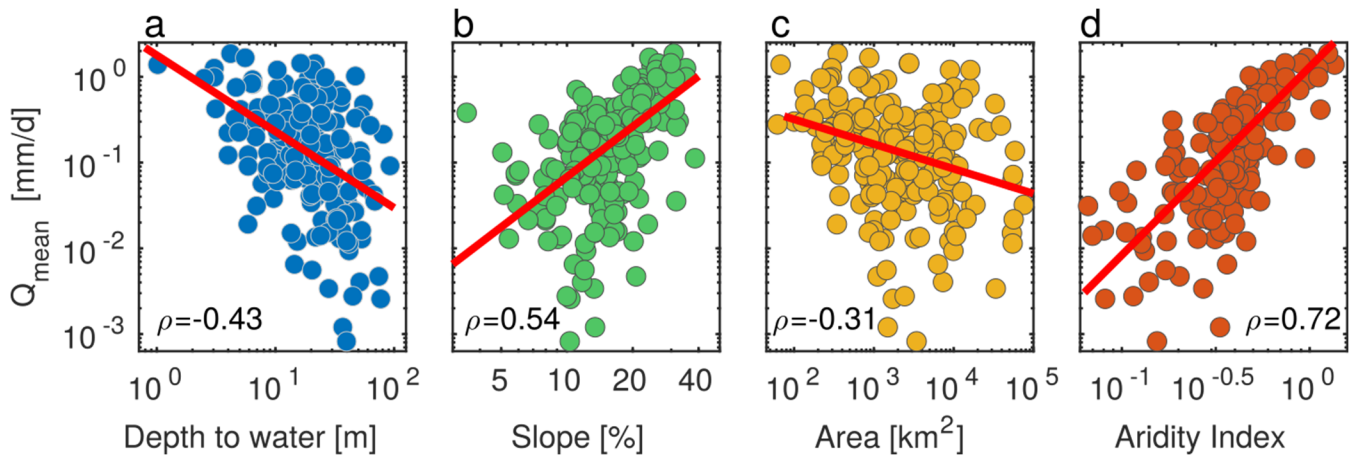
This supplementary information file contains supplementary figures S1 through S3.



**Figure S1.** Time series of precipitation and stream discharge for the timespan 2000-2003, for 3 catchments with shallow groundwater (in blue on map) and 3 catchments with deep groundwater (in red on map). This figure is identical to Figure 2 in the main text, except it shows smaller timespans so that the runoff dynamics are clearer. Note that axis scales vary so that each catchment's behavior is visible.



**Figure S2: Relationship between Aridity Index and groundwater levels.** Groundwater levels in arid climates (smaller Aridity Index) are typically deeper compared to groundwater levels in humid regions (larger Aridity Index).



**Figure S3. A correlation analysis between mean specific discharge (discharge per basin area) and catchment attributes.** The relationships shown here are broadly similar to those shown for RRD peak height in figure 4 of the main text.