Figure S1. Identification of hydrological drought (HD) events.

Explanations for Figure S1:

Taking Figure S1 as an example to illustrate the process of HD events identification and the meanings of drought duration and severity. Three thresholds SDI_0, SDI_1, and SDI_2 are applied in HD events identification. Four candidate HD events a, b, c and d are preliminarily identified based on SDI_1. The duration of the events a and d is only one month, however, because the SDI value of a event is greater than SDI_2, it is excluded from the candidate drought events. Although SDI values in events b and c are also greater than SDI_2, they are preserved because their duration is longer than one month. Moreover, because the interval between two events b and c is only one month and the SDI value of that month is less than SDI_0, then b and c are combined into one drought event. Finally, two HD events b-c and d are identified. The duration of a HD event is from the beginning to the end of the HD event. The area with SDI less than SDI_1 is considered as HD severity, and the severity of b-c event is the area of b + c - e. The thresholds of SDI_0, SDI_1, and SDI_2 are respectively set with 0, -0.5 and -1 in this study according to the classification of HD events and the hydrological information and forecasting standard of China.