

Responses to the reviewers

Title: Identification, Mapping and Eco-hydrological Signal Analysis for Groundwater-dependent Ecosystems (GDEs) in Langxi River Basin, North China (hess-2023-151)

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Thanks to the experts giving so much valuable advice, now the revision notes are shown as following.

Public justification (visible to the public if the article is accepted and published):

Dear authors, thanks for the revised version. The referee was happy with the improvements. I agree. So for me the paper is almost ready for publication. I have two technical issues I would like you to look at. In Figure 9 c, you give three recession line with R2. The first one (red color) is a line between 2 points, with R2=1. I hope you agree with me this is not allowed and not informative. So I suggest to delete this first recession equation and R2. Second, all figure have quite strong colors, please check with Copernicus if these color schemes are acceptable for Hess (colorblind color schemes are asked for). Especially fig 3, with colors fading and text in color could be improved.

I also suggest to delete the words 'min' and 'max' along several of the axis in figure 7. Legends in Fig 2 and 7: please take legend/text out of the figure and into the caption or put the legend below the figure (lithology explanation for example). In Figure 7, please write the legend in the caption, not in color in the figure. This makes the figure very hard to read.

Kind regards

Thom Bogaard

Answer: Thank you very much for your suggestions. We have revised these four figures according to each suggestion.

1. For Figure 2, we moved the legend out of the image, placed it on top, and simplified the text.

For Figure 3, we changed the text to a uniform black color that is easy to identify, and deleted the colors that affect the resolution in some frames.

For Figure 7, we deleted a lot of text in the image and the "max" and "min" on the coordinate axis, and added a legend above the image.

For Figure 9, we deleted the straight line equation with only two points and replaced the original correlation coefficient R with R².

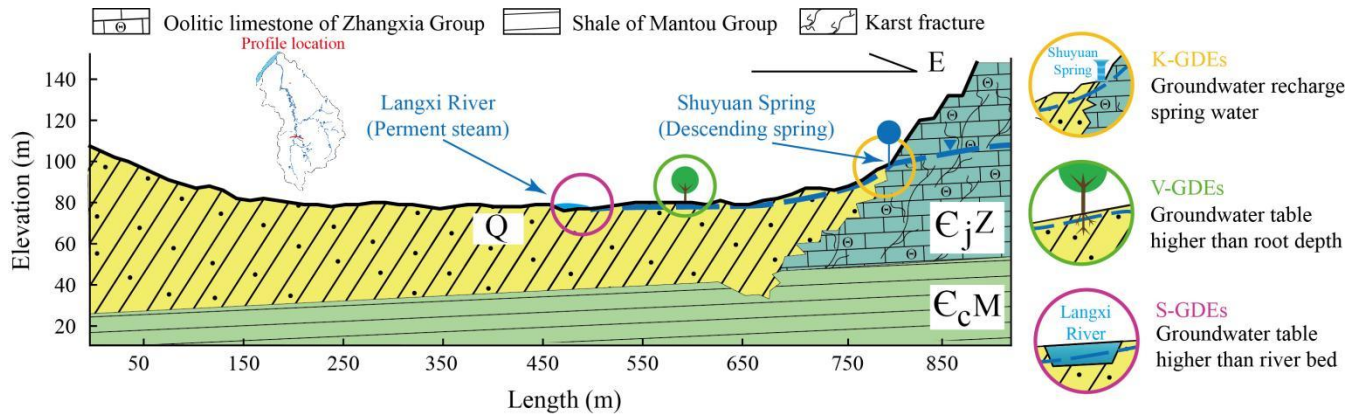


Figure 2: Hydrogeological profile of Shuyuan spring in LRB. The dotted line shows the characteristics of the water table in the geological section. The geological types in the figure are Q: Quaternary sedimentary layer; E_jZ : Cambrian Zhushadong-Zhangxia Formation limestone; E_cM : Cambrian Gushan-Chaomidian Formation limestone.

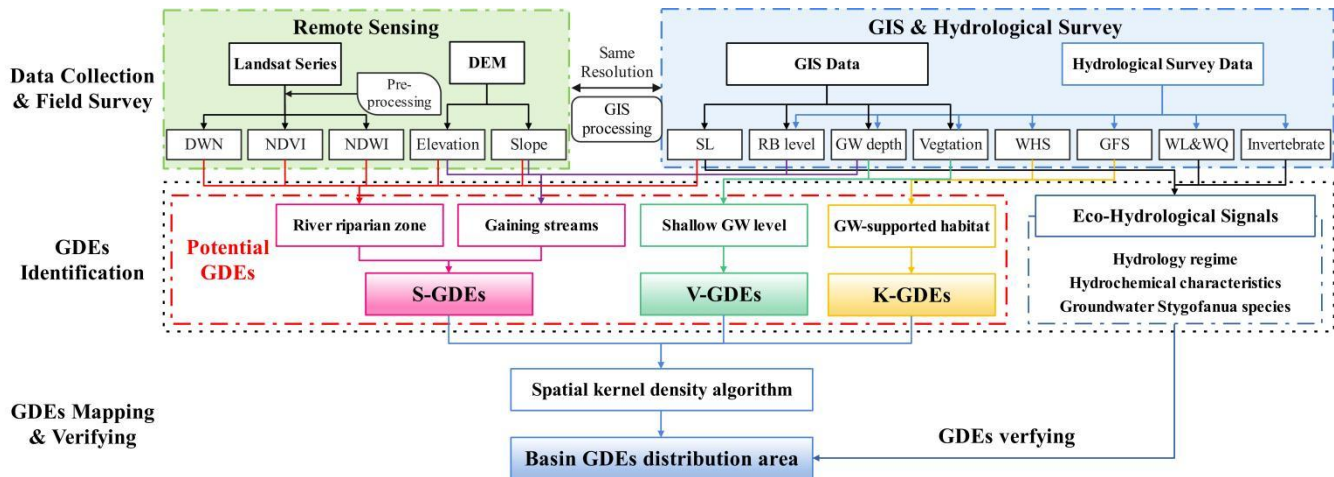


Figure 3: Diagnostic framework for GDEs identification, mapping and verifying. Note: DEM: digital elevation model; DWN: the difference between wet index and the normalized difference built-up and soil index; GIS: geographic information system; SL: surface lithology; RB: river bed; GW: groundwater; WHS: water hydrochemical sampling; GFS: groundwater fauna sampling; WL & WQ: water level and water quality; S-GDEs: stream-type GDEs; V-GDEs: vegetation-type GDEs; K-GDEs: karst-type GDEs.

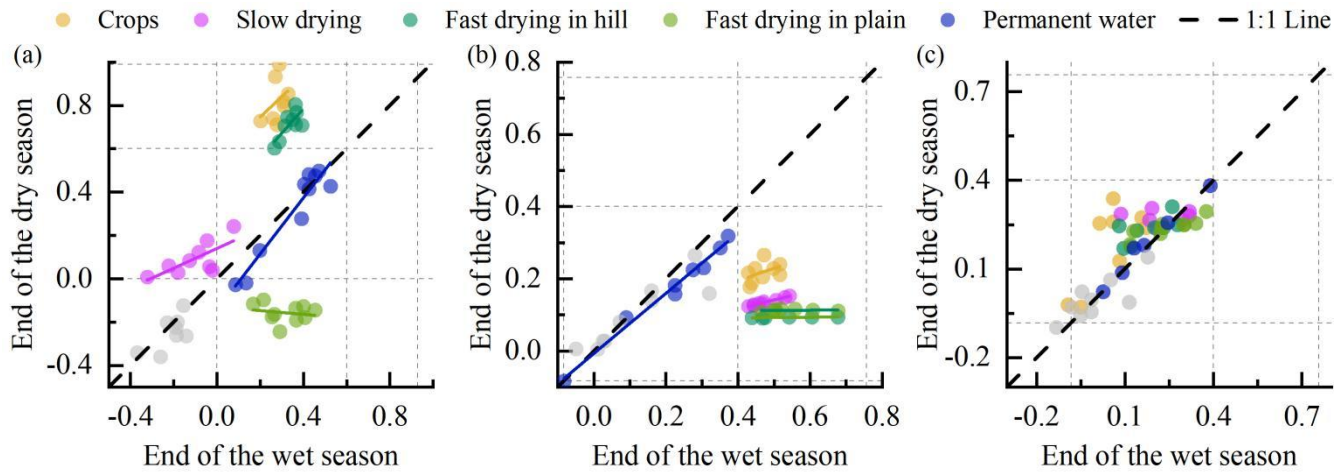


Figure 7: The centroid scatterplots for the difference between WET and NDBSI (a), NDVI (b) and NDWI (c) in the end of the wet season and the dry season (2020 to 2021).

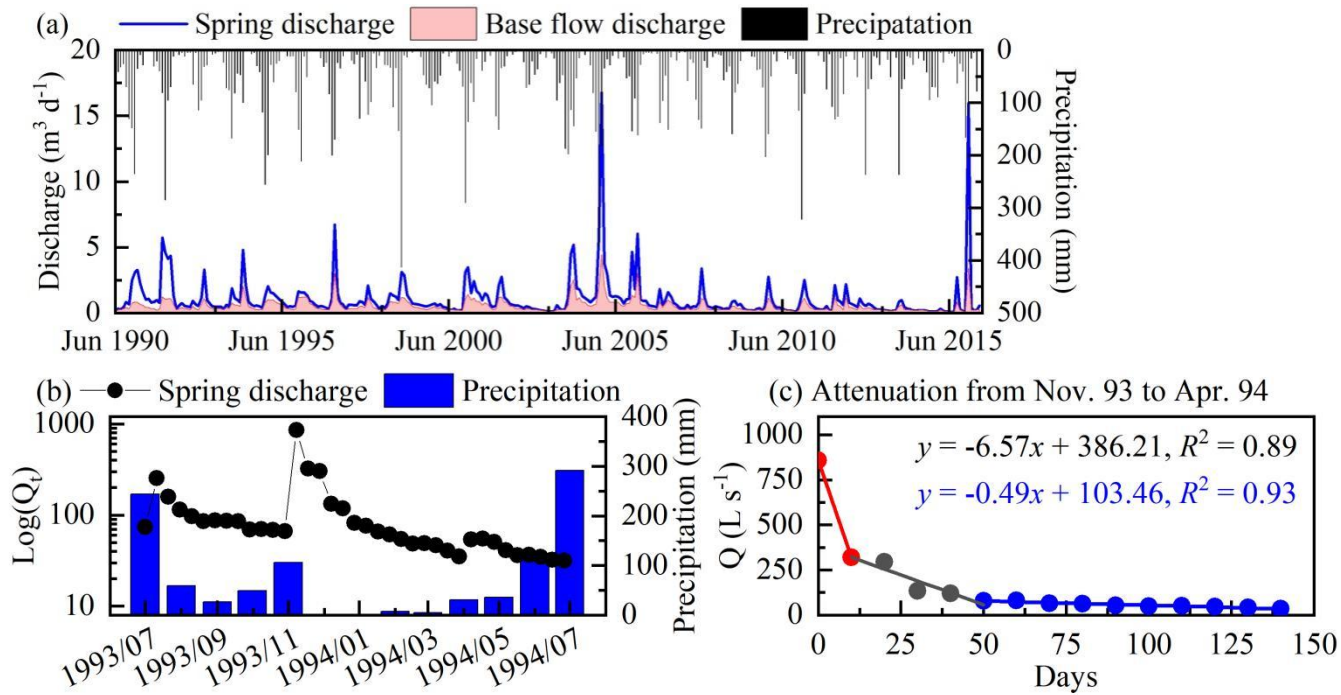


Figure 9: (a) Relationship between precipitation and Shuyuan section river flow and its base flow from 1990 to 2015; (b) Hydrologic graph of Shuyuan spring from July 1993 to July 1994; (c) Spring discharge attenuation curve of Shuyuan spring from November 1993 to April 1994.

2. The images in this article use a variety of colors. Below is the performance of each image in Color Blindness Simulator. We believe that the images in this article are still well recognizable under Color Blindness.

Fig1:

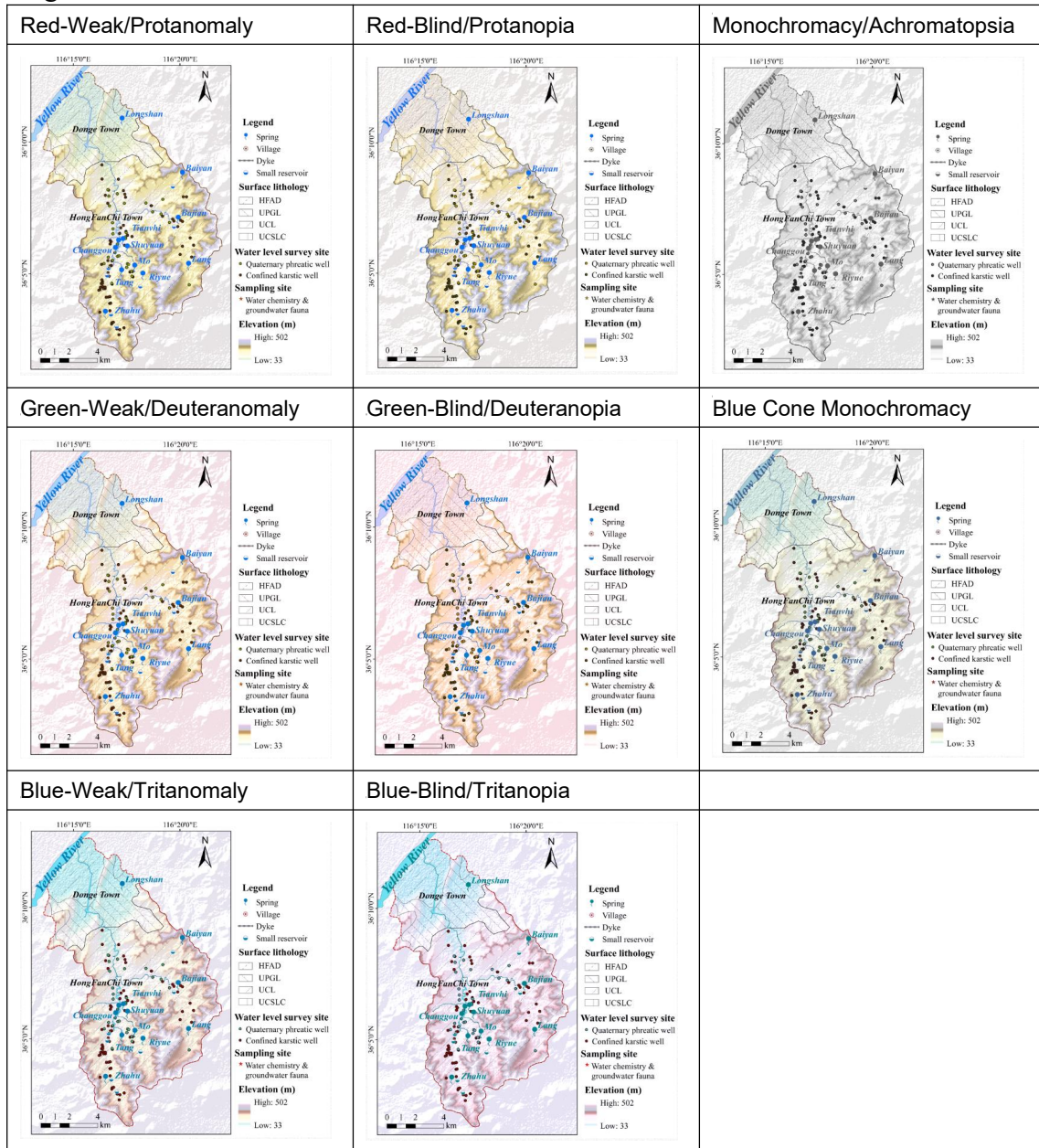


Fig2:

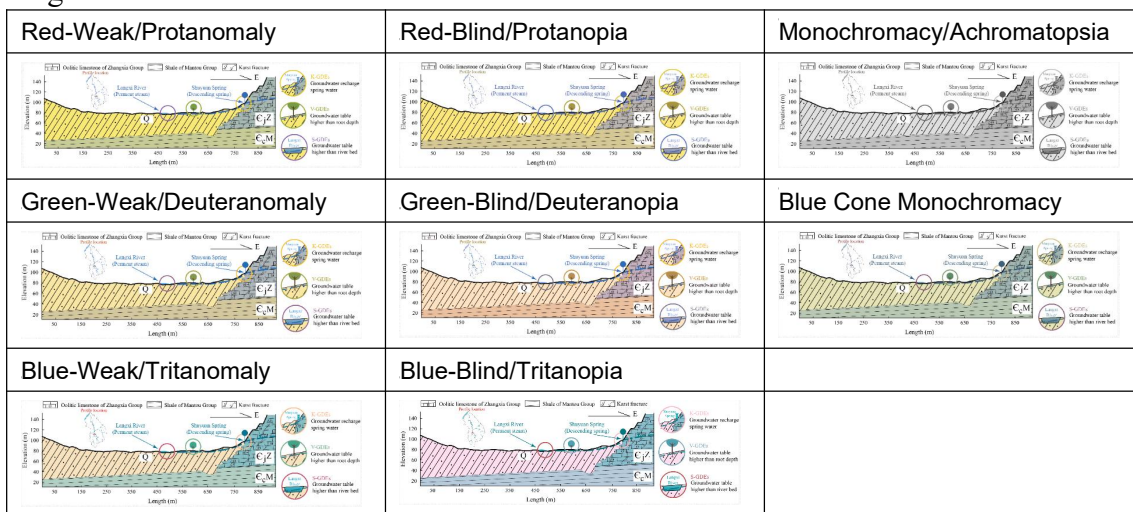


Fig3:

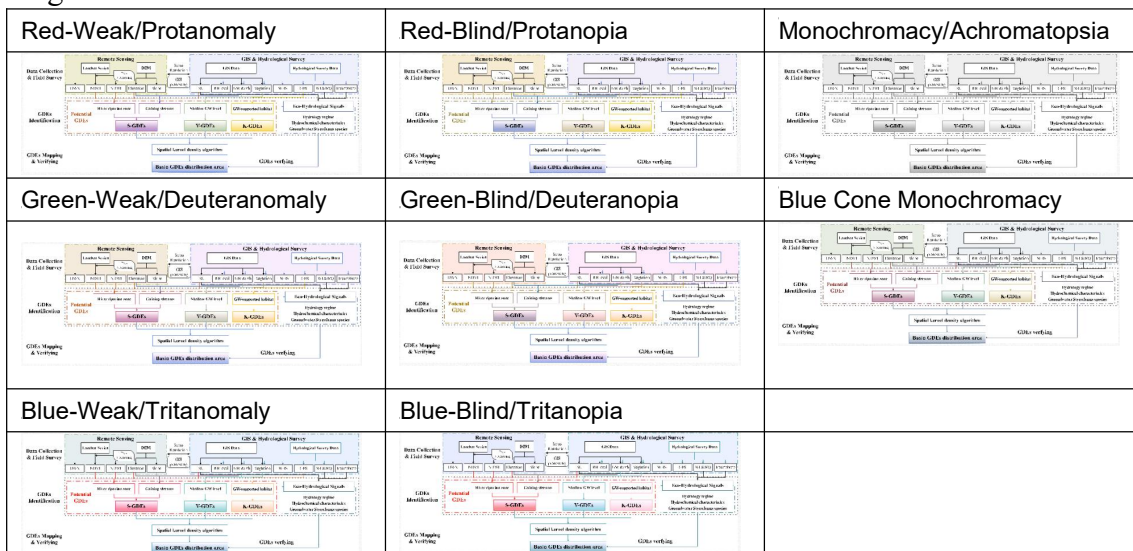


Fig4:

Red-Weak/Protanomaly	Red-Blind/Protanopia	Monochromacy/Achromatopsia
		
Green-Weak/Deuteranomaly	Green-Blind/Deuteranopia	Blue Cone Monochromacy
		
Blue-Weak/Tritanomaly	Blue-Blind/Tritanopia	
		

Fig5:

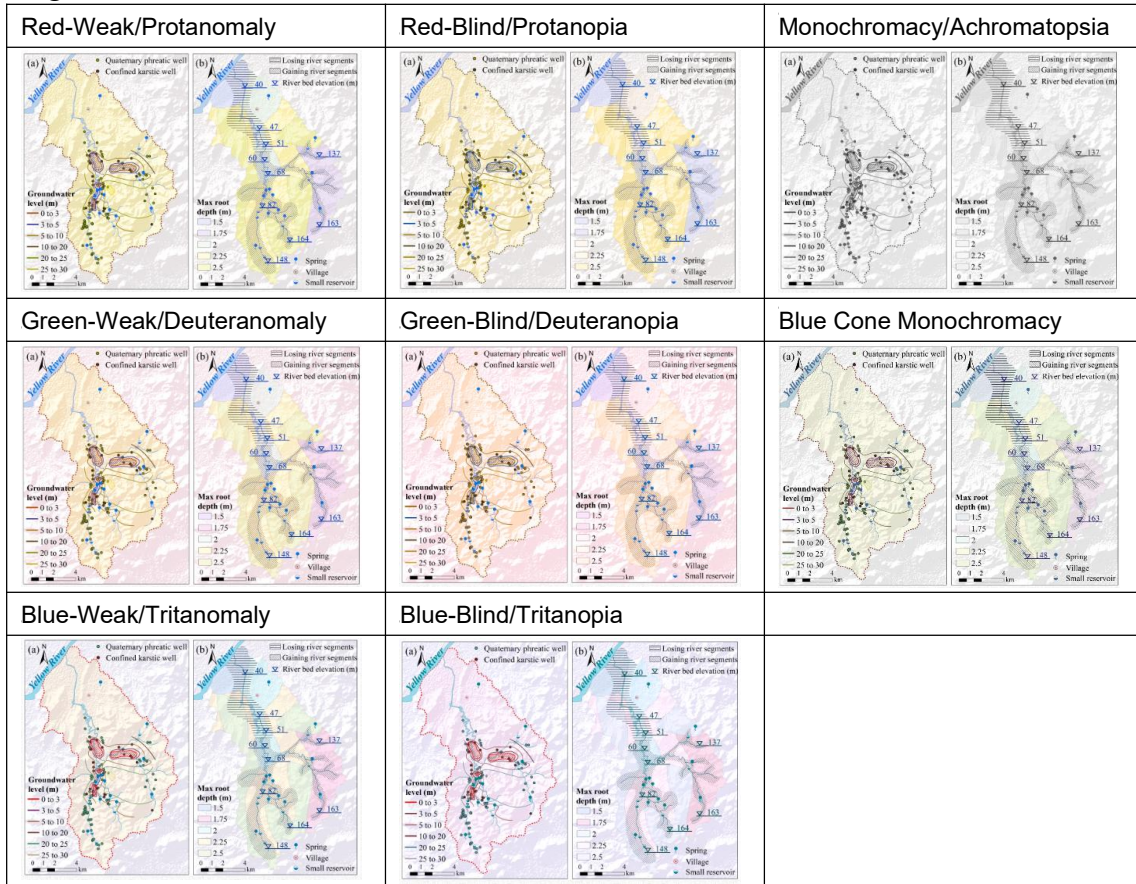


Fig6:

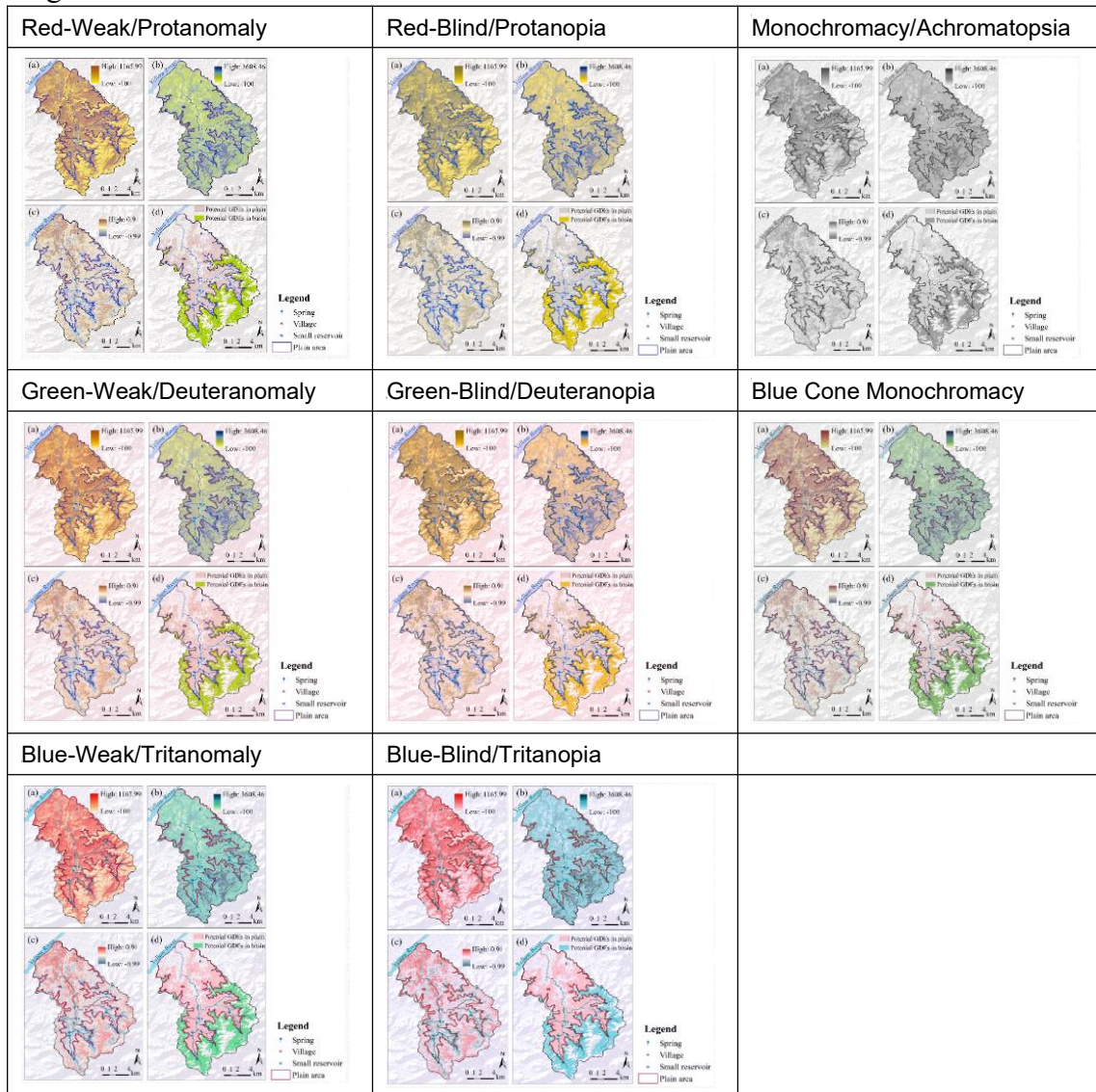


Fig7:

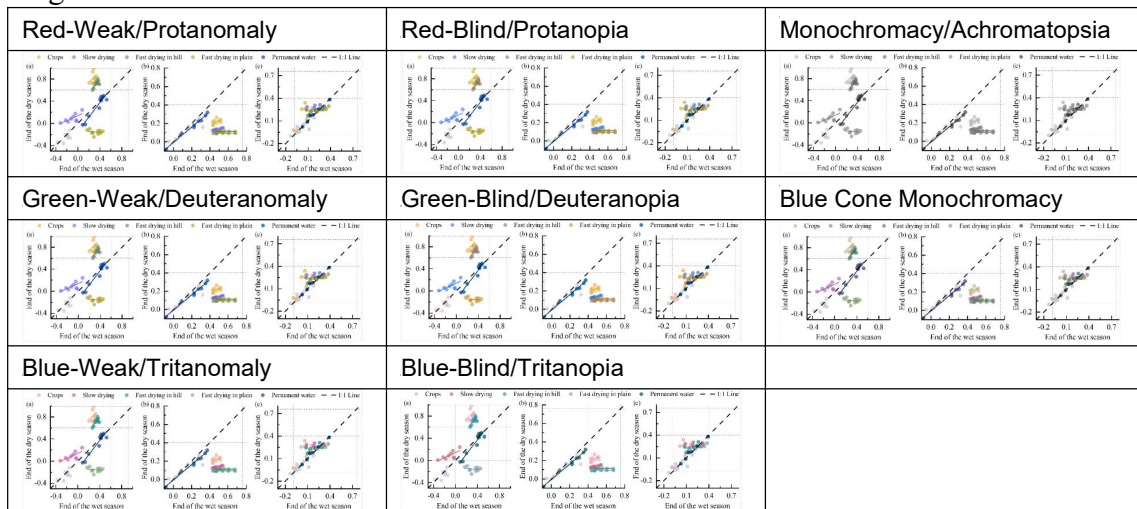


Fig8:

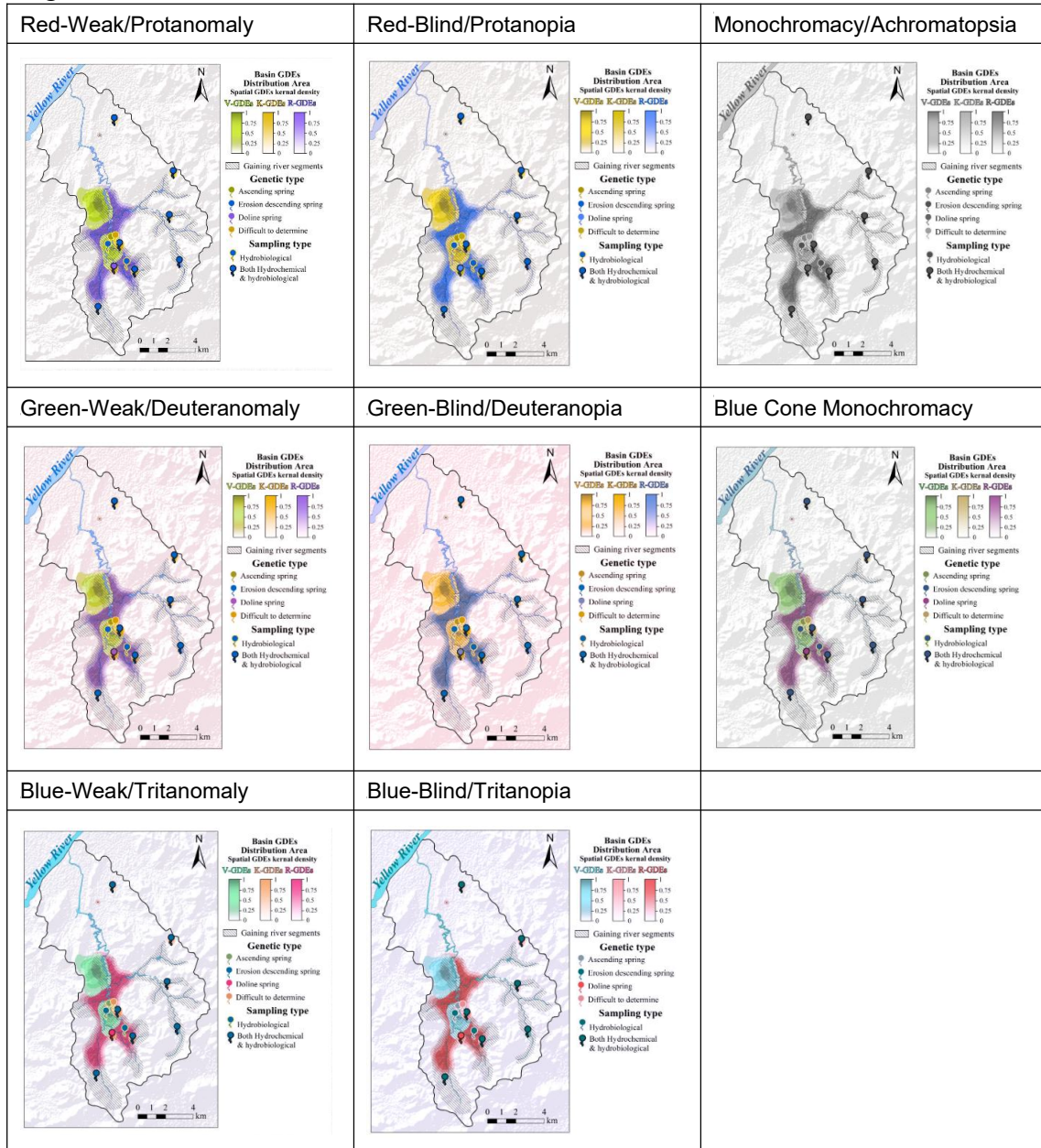


Fig9:

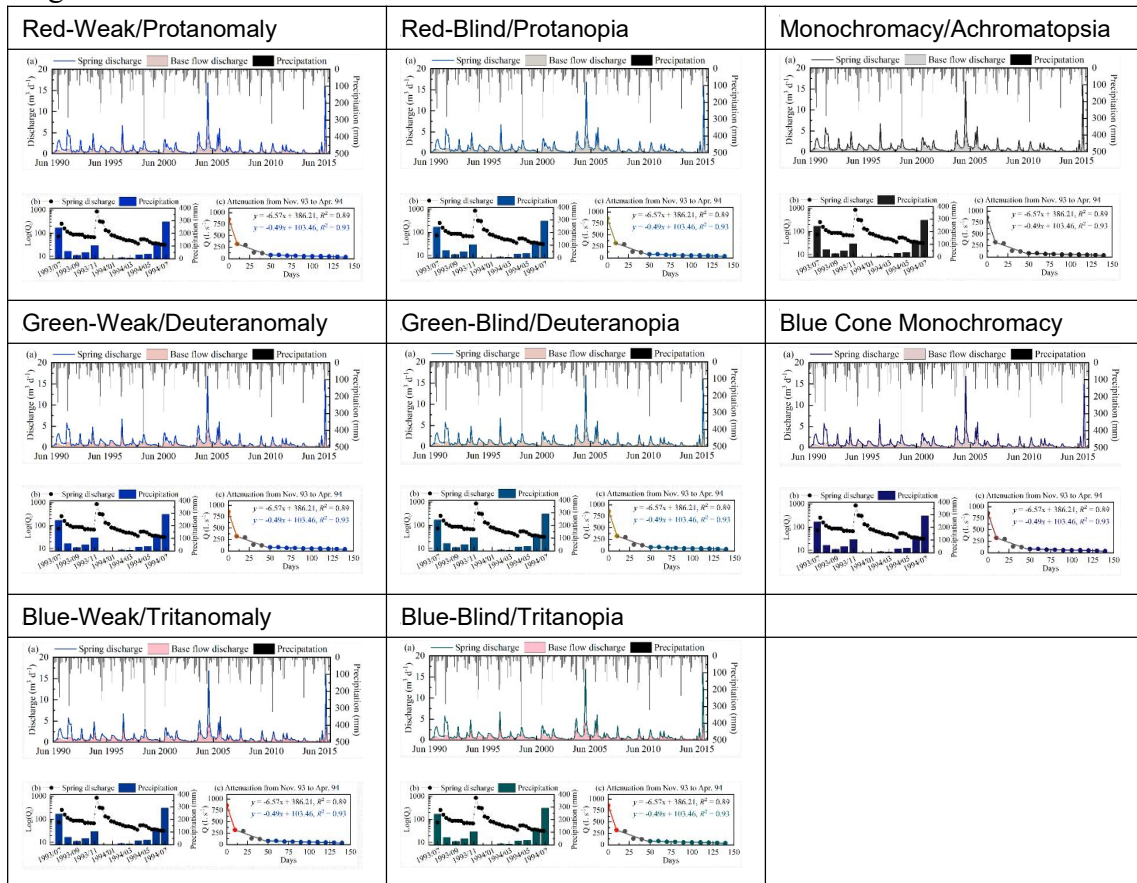


Fig10:

