

This manuscript addresses groundwater recharge processes in a gully system and aims to quantify recharge rates and pathways using hydrometric, isotopic, and geochemical approaches. While the topic is potentially interesting and relevant to HESS, the manuscript in its current form is poorly written, excessively long, and lacks a clear narrative structure. Moreover, the presentation of the results makes it difficult to assess whether the data adequately support the authors' conclusions. Interpretations are frequently motivated by background knowledge or earlier studies, yet the manuscript does not clearly distinguish between new insights derived from this work and those that primarily serve as contextual or corroborative information. This lack of separation between novelty and background substantially weakens the scientific message. I think substantial revision is required before the scientific contribution can be properly evaluated.

General comments:

1. A major issue is that Sections 1-3 contain extensive redundant descriptions, particularly regarding landscape characteristics, hill–gully contrasts, and background motivation. These sections mix site description, conceptual motivation, and literature background in a way that dilutes the main research questions and obscures the novelty of the study. As written, it is often unclear what information is background context, what is specific to the study site, and what directly supports the research objectives.

If I understand correctly, Sections 2-3 are primarily intended to function as a Materials / Study Site section, describing landscape structure and hydrological setting. However, the current version repeatedly interweaves general motivation (e.g., importance of gullies vs. hill) with site-specific descriptions. This mixing weakens the paper's focus and makes the manuscript unnecessarily long.

I would suggest the following structural changes:

- Condense Sections 1–3 substantially, removing repetitive explanations of hill vs. gully processes.
- Move most general motivation and background discussion to the Introduction.
- End the Introduction with a clear and concise paragraph that explicitly states why this study site was chosen, what relevant previous work has been conducted here, why this site is particularly suitable for addressing the stated research questions, and what the specific research questions or hypotheses are.

2. Interpretation and use of chloride concentrations. The role of chloride as supporting evidence for recharge pathways is repeatedly mentioned but remains vague and weakly justified. And I only found one figure in SI about chloride information, which is also not that informative as the author stated. For example,

- Line 536: The statement that "multiple lines of observational evidence, including isotopic composition, chloride concentrations, and water age (ITTP)" support the identified

pathways is too general. The manuscript does not clearly explain how chloride independently supports these conclusions.

- Lines 547–552: The argument that similarities in chloride concentrations between pond water and pore water indicate mixed recharge is not logically developed. Chloride patterns alone do not necessarily imply source mixing without additional constraints (e.g., conservative behavior, spatial gradients, mass balance, or exclusion of evaporative concentration effects). The logic linking chloride distributions to the stated conclusions should be clarified and strengthened, or the claims should be toned down.
- Line 856-858: The conclusion states "While isotopic evidence for recharge from pond water is obscured by evaporative fractionation, chloride concentrations provide a clear signal of subsurface connectivity." It is not supported by any direct or quantitative results presented in the manuscript. I do not find clear evidence demonstrating such connectivity based on chloride data alone.

Moreover, if chloride concentrations are intended to provide critical supporting information for the main conclusions, the relevant figure should be moved from the Supplementary Information to the main text, accompanied by a clearer and more rigorous explanation of how chloride constrains recharge pathways.

3. Role of surface water. The Discussion contains extensive statements regarding the large contribution of surface water to gully recharge. However, much of this discussion appears to rely on previous studies rather than direct analyses presented in this manuscript. The authors should clearly distinguish between conclusions derived from their own results, and contextual information drawn from earlier work.

4. Hill versus gully. The results presented in this study are derived exclusively from the gully system, and the manuscript does not include a direct comparison of recharge behavior between hill and gully settings at the same site and during the same period. As such, the authors should be very cautious in how they frame both the Introduction and the Conclusions, particularly where broader contrasts between hill and gully recharge processes are implied.

Given the absence of contemporaneous hillslope observations, statements suggesting relative differences in recharge magnitude or pathways between hill and gullies should be clearly identified as inferences based on previous studies, rather than findings derived from the present work. This distinction is especially important in the conceptual framework and schematic figures, where hill processes appear alongside gully processes without sufficiently clear attribution.

One example is the conceptual figure (Fig. 10). I recommend that the authors:

- Explicitly state which components or pathways are supported by results from this study and which are drawn from previous literature;
- Redraw the figure to include quantitative or semi-quantitative information (e.g., relative magnitudes, ranges, or percentages of pathways) where supported by data.

In its current form, the conceptual figure does not clearly highlight new insights generated by this study, and instead risks reinforcing a narrative largely based on prior work.

Specific comments:

- Fig. 1: Please label the horizontal and vertical scale of the hillslope profile. Without scale information, the geomorphic interpretation is unclear. And consider to switch the order of Fig. 1 and 2.
- Lines 272–273: The relationship between groundwater level and water pressure is introduced without sufficient justification. Why were these parameters selected over others? Please clarify the physical reasoning.
- Lines 428–430 / Fig. 4c: Fig. 4c does not show a consistently decreasing trend of specific yield with depth. The statement that "Specific yield (S_y) peaks at –20 cm (4.5%) but decreases with depth" is not convincingly supported by the figure. The interpretation that deeper layers "store water with minimal drainage" therefore appears overstated and should be revised or better supported.
- Fig. 5: The current representation of rainy versus dry seasons is unclear. The figure does not effectively illustrate isotopic differences between seasons, making the associated text difficult to support. Presenting seasonal mean values (or distributions) for each water type would likely convey the message more clearly.
- Fig. 8: The meaning of "direct effects" and "total effects" is not clearly explained. Please clarify these terms explicitly in the caption and main text.
- Fig. 9: The lines representing the "RISE" and "MRC" methods are not clearly distinguishable in the figure.