

Responses to Minor Revisions of Egusphere-2025-2984: "Questioning the Endorheic Paradigm: Water Balance dynamics in the Salar del Huasco basin, Chile" By Francisca Aguirre-Correa et al.

We would like to once again thank the Reviewers for their valuable feedback throughout the review process and for recommending our manuscript for publication in HESS. We also extend our sincere thanks to Dr. Gabriel Rau for efficiently handling the review process and for his constructive revisions.

All minor comments from Dr. Gabriel Rau and Prof. Howard Wheater have been addressed in the attached revised manuscript. Our responses to the comments are provided in blue font, indicating how and where the revised manuscript has been modified. In addition, we include a second version of the manuscript in which all changes are highlighted for clarity.

Editor Dr. Gabriel Rau

Editor. The Figure 3: It would be more intuitive to state the y-axes tick numbers on the right side as full numbers (not scientific notation). Also, a legend would help to interpret the blue and red shades shown in the plot (in addition to the caption explaining these).

We have updated Figure 3 accordingly by using full-number y-axis tick labels and adding a legend to clarify the blue and red shading as La Niña and El Niño years, respectively.

Editor. Figures 4 and 5: Labelling of tick marks of the colour bars (left side) and subplots (right side) should also be full numbering (e.g., 1,200 instead of 1.2×10^3) to improve intuitive comparison of the numbers.

We have updated Figures 4 and 5 so that all tick labels are shown as full numbers rather than in scientific notation.

Editor. In the Conclusions, please could you place a line break before "Beyond these dynamics ..." to separate the two paragraphs and their logic.

We have inserted the requested line break in line 491.

Editor. Data availability: Stating "Data used in this research is publicly accessible" is not sufficient. Please organise and archive the dataset you compiled in a suitable repository (e.g., figshare, Zenodo, etc.) with description and permanent DOI, and cite this in the data availability section.

We have archived the compiled dataset in a public repository (DOI: <https://doi.org/10.17605/OSF.IO/6BG2W>) and updated the Data Availability section to include the repository link and citation.

Lines 641-643: *"Data availability. The downscaled datasets generated for each Hydrological Response Unit (HRU) defined in this study are openly available at: <https://doi.org/10.17605/OSF.IO/6BG2W>. The original datasets used as input for the downscaling are publicly available from their respective repositories."*

Reviewer 1 Prof. Howard Wheater

Reviewer 1. Line 52 delete comma

We have updated the revised manuscript in line 52.

Reviewer 1. Line 106 suggest insert ‘while of lack of reliable groundwater data precludes explicit calibration of groundwater recharge, we note that ...this model has previously....’

We have included the suggested sentence in lines 107-110 of the revised manuscript.

Lines 107-110: *“While the lack of reliable groundwater data precludes explicit calibration of groundwater recharge, we note that this model has been previously applied in the Salar del Huasco and other Altiplano basins (e.g., Yáñez-Morroni et al. (2024a, b); Blin et al. (2022); Acosta (2004)). In these studies, recharge outputs from the rainfall-runoff model were successfully incorporated into groundwater flow models, demonstrating its credibility in groundwater applications.”*

Reviewer 1. Line 127 the satellite derived estimates are in fact model based! Minor rephrase needed e.g. ‘or other model-based estimates’

We have rephrased the sentence in the revised manuscript.

Line 128: *“... rather than potential evaporation or other model-estimated fluxes.”*

Reviewer 1. L152 reservoir’s

We have updated the revised manuscript in line 152.

Reviewer 1. L154 not simulated explicitly

We have updated the revised manuscript in lines 154-155.

Reviewer 1. L236 what is meant by overall hydrological response? Please clarify

The basin hydrological response was already defined in the manuscript as the sum of the individual HRU responses across sub-basins (lines 170-171 in the original manuscript, lines 171-172 in the revised manuscript). To avoid ambiguity, we have removed the term “overall” in line 240.

Reviewer 1. L344 replace ‘remind’ with ‘remember’

We have updated the revised manuscript in line 341.

Reviewer 1. L395 delete first comma

We have updated the revised manuscript in line 393.

Reviewer 1. L412 associated with

We have updated the revised manuscript in line 410.

Reviewer 1. L416 replace 'such' with 'the large'

We have updated the revised manuscript in line 414.

Reviewer 1. L471 although this is recommended in the conclusions, I suggest including here a recommendation for gw observations to constrain the hydrological model and groundwater recharge estimates. It seems odd not to include it in this discussion.

We have added a recommendation at the end of the Discussion section highlighting the need for groundwater observations to better constrain the hydrological model and groundwater recharge estimates.

Lines 465-470: *"To this end, groundwater observations are essential to better constrain the hydrological model and groundwater recharge estimates. Further validation of satellite-derived inputs against local observations across the basin, particularly for evaporation and air temperature, is also strongly recommended to enhance the robustness of the water balance assessment. In addition, a more integrated and robust methodological approach is recommended to quantify subsurface storage changes and to estimate how large the groundwater catchment would need to be to explain the observed water balance of the basin."*