

Earth Syst. Sci. Data Discuss., author comment AC2
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Reply to RC2

Andrew J. Wiebe and David L. Rudolph

Author comment on "Meteorological and hydrological data from the Alder Creek watershed, SW Ontario" by Andrew J. Wiebe and David L. Rudolph, Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-46-AC2>, 2022

The authors would like to thank Anonymous Referee #2 for the comments and questions. In the following, the reviewer's comments are in bold, and the authors' responses are in italics. All line numbers refer to the original, preprint manuscript. As this is the Open Discussion phase, changes to the manuscript have not yet been made, and the responses indicate what changes the authors propose to make.

Authors' responses to: **Anonymous Reviewer #2 (RC2)**

Citation: <https://doi.org/10.5194/essd-2022-46-RC2>

In this manuscript, the authors have provided a report on hydrometeorological data from a watershed in southwestern Ontario, Canada. The dataset provided is comprehensive, which is very useful for different environmental disciplines. The paper is well-written. But, it needs some revision before it can be considered for publication. Below are some comments that can be used to improve the manuscript.

There are so many figures, maybe some of them can be deleted. For instance, figures 6, 8, 9, 15, 16 can be safely removed. Merge Figures 3 and 4. Merge Figures 10 and 11. Why do we need simulations included in this manuscript (i.e., Figure 14)? I recommend removing all simulations from the manuscript and just focusing on the observations that are not available from national monitoring networks.

Figures:

Figures are often an early point of interaction for the reader to assess the gist of a manuscript (or dataset, in this case). We propose to maintain most of the figures and remove Figure 9 for the reasons stated below. We will reduce and optimize the use of the figures within the manuscript.

Figures 3 and 4 will be merged.

Figure 6 shows one of the highlights of the dataset – rainfall measurements at multiple stations within a small watershed. We propose to keep this figure.

Figure 8 – This figure illustrates that the water level data have not been corrected (which might be erroneously assumed). We propose to keep this figure.

Figure 9 – This one could be removed as suggested.

The legibility of Figures 10 and 11 will likely decrease if they are merged and each borehole's size in the image becomes smaller, so we would recommend against this.

Figure 15 – While this figure does not present a large amount of information, if the simulations remain in the manuscript (as argued below), then it is a helpful illustration. We propose to keep this figure.

Figure 16 is helpful for showing the extent of the rating curve data (i.e., mostly at low flows). We propose to keep this figure.

Simulations:

The simulations illustrate types of analysis that could be performed with the dataset. One of the goals of ESSD is to provide interesting and useful articles (Carlson and Oda, 2018, ESSD, <https://doi.org/10.5194/essd-10-2275-2018>). We would prefer to keep these in the manuscript for those interested in groundwater recharge, and to promote the under-utilized (Kurylyk and Irvine, 2019, Ground Water, <https://doi.org/10.1111/gwat.12910>) use of temperature data for these types of estimates.

In general, all captions are too short (e.g., Table 7). Provide more descriptive captions for all figures and tables. Add another column for the time steps of the parameters.

This will be done

L33: Spell out acronyms i.e., CH2MHILL, SSPA. The same goes with TRCA on line 41, OMNRF on line 51, OGS on line 53, OMNR on line 54. And also, why does OMNRF change to OMNR?

OK - CH2MHILL is a company name, but the others can be spelled out. OMNR to OMNRF: The Ontario Ministry of Natural Resources changed its name to include Forestry.

L43: It was mentioned “between 2013 and 2018” in the abstract. Why is it different here?

This will be fixed; thanks for the careful review.

Fig. 2: Is there any data on groundwater recharge? Without infiltration, we cannot have the water budget closed.

The average recharge rate for the watershed will be mentioned here, citing previous work. Thanks.

L82: It shouldn't be “were” instead of “was”?

Correct, thanks.

Fig.3: What does "Temperature sensor" refer to? Soil or air? Mention explicitly.

The legend item refers to a soil temperature sensor – this will be clarified.

Table 1: Spell out "SOWC" in the caption.

This will be done.

L166: What does "Temperature" refer to? Soil, air, or water?

Line 166 refers to groundwater temperature – this will be clarified.