

# CAMELS-AUS v2: updated hydrometeorological timeseries and landscape attributes for an enlarged set of catchments in Australia

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## Author response to reviewer 2

	Reviewer comment	Author response
1	<p>This manuscript presents an update of the Australian Camels data set. The Camels data sets have become very useful for the modelling community and I greatly appreciate the efforts by the authors. While I am very positive about this publication, I would like to raise a few issues, which might improve the usefulness of this data set.</p>	<p>Thank you for your detailed suggestions to improve the manuscript and dataset. Much appreciated!</p>
2	<p>Major issues:</p> <p>It might be valuable to provide different options for precip and pot-evap series. However, this also shifts the need to decide on the most suitable data to the user of this data set. So, while I agree that it is a special feature to offer different data variants (as stated on P2L33), I would also say that this is not without problems. It would be good if the authors could provide some guidance on which variants to use as standard. After all, one of the advantages of the Camels data sets is that the user does not have to take this type of decisions and that the modeling community has one common data set. If now each user chosen some different combination of precip and pot-evap then the results of modelling studies will not be comparable after all. So, I would recommend doing some analyses and then recommending which data variants should be used usually.</p>	<p>This is a good point, and was also raised by reviewer 1 (see their comment #2). We will provide more information that is relevant to choosing between the available products, and we will also provide a recommendation, as suggested. The recommendation will cover the choice of precipitation and PET. There is no need to do further analysis to provide this information and recommendation.</p>

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3	The same argument can also be made regarding the inclusion of catchments, which have actually been removed for (probably) good reasons in the newer HRS (“let users decide”, P5L106). The authors would be in a much better position to make that decision than most users. Again, I am asking for some clear guidance on when these catchments should (not) be included.	We accept the logic of this comment. In the revised manuscript, we will state our opinion that the current selection guidelines appear to be well founded, and on this basis, we will recommend the 467 that meet this criteria (note that these catchments are already clearly marked in the dataset). As stated in the manuscript, the remaining catchments are still important to include for compatibility with other studies (some for backwards compatibility to v1, others for compatibility with the studies named at line 115 of the original manuscript). Reviewer 2 asked for a selection of “near-natural” catchments, which we will select from the 467.
4	Much of the manuscript is based on McMahon et al. (under review). In the reference list, no information is provided about which journal this manuscript is under review. Honestly, I find it problematic to base a method section on a manuscript that is under review. Until a paper is accepted/available, I would ask the authors to provide more details on the methods and data used for this part of the analysis. Frankly, I was not able to follow/assess this part.	Firstly, we apologise for omitting the journal information for this submitted manuscript (the answer: HSJ), along with the submission date. One of us (Keirnan) has corresponded with the authors of this manuscript and has been advised that it is currently with the journal, having been subjected to very minor revisions in the most recent resubmission. As such, the authors expect that it will be accepted for publication soon. In the unlikely event that it is still not accepted at the time when the resubmission of the CAMELS-AUS v2 manuscript is due, we will confer with the ESSD editor on the best way forward.
5	Minor issues:  In the abstract (and elsewhere): Use past tense for your work, “streamflow and climatic information WERE updated” and “information WAS improved”	We will review the tense as requested, but we won’t be using past tense because it is difficult to distinguish between different versions of the same dataset (eg. if we say the information “were” updated, does this refer to the current dataset or a previous one?). Instead, we will use “has been” and “have been” (technically this is the present perfect continuous tense).
6	The use of a reference in the abstract looks rather unusual	This follows the convention from the first version of the dataset. If I (Keirnan) recall correctly, we were instructed to do this.
7	P2L36 “this need”, not clear which need this refers to	We will alter to “Responding to the same imperative to create combined datasets...”
8	Table 1: I don’t see what the 3rd column (reason/motivation) adds and would recommend to remove this column	On the contrary, we suggest that users of datasets may find it quite difficult and annoying if a change is made without the rationale being clear. Thus, we propose to retain this information.

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9	P4L79: good that the authors clearly state that the selection was done by the ABM, but it would be good to know a bit more (criteria, reference)	Although there is no reference per se, there is a website, and we will add the words “for more information, please refer to <website>”. As for the criteria themselves, they are stated in manuscript in the lines that follow.
10	Figure 1: show a white and a grey circle in the legend. Now you show a black circle and only mention the colors in text. I found this confusing.	OK, we will alter this as instructed.
11	P5L103: unclear what “these 43” refers to	We will add the text “these 43 failed catchments” here. Note that, three lines previous, there are the words “Of the 222 HRS-2015 stations ... 43 failed the new selection guidelines”.
12	P7L151: is *.mat a suitable format for sharing data?	<p>Firstly, we note the wider context here; namely, the full text is:</p> <p><i>“We ran all the calculation functions in TOSSH [which is a MATLAB-based toolkit written by third party authors] and obtained a unique set of 49 streamflow signatures... Among these, 10 signatures have multiple outputs, so we stored only the 39 single-output signatures in the dataset attribute table. For users who need the complete set, we also provided a .mat file that includes all outputs of TOSSH including the 49 signatures and associated information such as run-time messages.”</i></p> <p>The key point to note here is that we are providing 39 of the 49 signatures in the regular attribute table (which is a text format). This comment relates only to the other 10 which are not easily stored in the attribute table due to their unusual format; plus also there are runtime messages that are useful to retain. While we agree that .mat is not a universal format, the alternative would be to write “Those users that wish to have the full set of 49 will need to re-run the TOSSH toolbox for themselves”, which seems a bit silly when we have this information on file as a .mat file.</p>
13	Figure 3: Please provide some info on the different variables in the figure caption. Finding the variables and information in the tables is rather difficult, so make things easier for your reader (the maps are useful; help your reader understand them!).	OK, we will augment the caption so that the reader does not need to delve into the large tables for this information. Thanks for the suggestion.