

We sincerely thank the editor and reviewers for taking the time to review our manuscript and providing constructive feedback to improve it.

Referee: Thanks for addressing the comments and improving the presentation of the manuscript. However, there are still some issues that are unclear. I appreciate that the authors put extra effort into evaluating the performance of over/under-sampling techniques, e.g., SMOGN, which is still not widely used. Here are my comments and questions.

Response: Thank you for the time spent and for the thoughtful comments and suggestions towards improving our manuscript.

Referee: 1. In the MR methods, can you explain how the model predictor variables, and the number of the variables were determined?

Response: Thank you for your comment. Please note that this explanation can already be found in the Methods section, line 191.

Line 191: "Initially the model predictors were selected on the basis of their availability and the results obtained with other studies (e.g., Zhu et al., 2019c; Feigl et al., 2021)."

Referee: 2. Please check the line number in the author's response, for example, I cannot find the sentences in the author's response in line 94.

Response: Thank you. We have checked the line numbers. The sentence is in line 97.

Referee: 3. Suggest deleting citations in the conclusion and rephrasing it as something like "Importantly, our study further confirmed the accuracy of the Random Forest model can be significantly improved..."

Response: Thank you for your comment. The citation was removed, and the sentence was rephrased as follows:

Line 717: "Importantly, our study further confirmed the accuracy of the Random Forest can be significantly improved by the generation of synthetic samples to some poorly represented ranges within the training datasets by applying an over/undersampling technique."

Referee: 4. Consider shortening and focusing the abstract, for example, in line 13: "Therefore, the main goal of this study is to identify a suitable modeling solution for the prediction of river water temperature given the scarcity of the forcing datasets." could be modified to "Therefore, identifying a suitable modeling solution for the prediction of river water temperature with a large scarcity of the forcing datasets is of great importance." Also, consider shortening the description of the methods and results in the abstract.

Response: Thank you for your comment. We have included the reviewer suggestion and we have shortened the abstract as much as possible.