

RC1: 'Comment on nhess-2024-187', Samar Momin, 17 Oct 2024

This review is concerned with the paper titled "The 2018-2023 drought in Berlin: impacts and analysis of the perspective of water resources management":

General Comments:

The paper presents an in-depth and comprehensive study of the 2018-2023 drought in Berlin, focusing on the hydrometeorological, hydrogeological, and water resource management aspects. It effectively addresses the challenges posed by prolonged droughts and provides an analysis of the effectiveness of water management strategies in Berlin and its surrounding catchments, specifically the Spree and Obere Havel catchments.

The title accurately reflects the content, and the abstract offers a clear summary of the objectives, methodology, and findings. The manuscript is well-structured, with clear sectioning that guides the reader through the complex processes discussed.

The figures and tables provide valuable visual data, supporting the analysis, and are of high quality. The manuscript is also well-referenced, with appropriate credit given to previous studies. Overall, the paper offers significant scientific contributions in the context of water resource management under drought conditions, making it relevant for both regional and broader applications in the face of climate change.

Authors response:

We would like to thank the reviewer for the overall positive assessment of our manuscript. The reviewer's comments provided constructive feedback and valuable suggestions, which we look forward to take into account in the revision process.

Please refer to individual comments below (in grey & italics).

Specific Comments:

1. **Comparative Analysis with Other Drought Events:** The study focuses primarily on the 2018-2023 drought. It would help to add (one) more comparison(s) with other significant drought event(s), either in Berlin's history or in other regions with similar climatic conditions.

Thank you for this suggestion. In both the results and in the discussion sections, we will go into more detail about previous significant dry years in Berlin and the region (e.g. 1982, 2003, where possible), also to highlight the severity of the 2018-2023 drought in comparison with previous events. We will further include information on pre-mining low-flow periods of the Spree in the introduction and relate to these in the discussion section.

2. **Future Projections and Climate Change:** The paper does a good job addressing future climate change impacts on water availability. It would help if the authors could elaborate on this section to include more specific projections that could provide clearer guidance for water resource management planning.

While we strongly agree with the suggestion to include or even propose more specific projections to provide clearer guidance for water resources management planning, we are currently unable to provide such guidance based on existing studies. The main reason for this is the high uncertainty in future precipitation. Developing and evaluating future projections of how climate change might affect water resources in the region is the focus of many ongoing projects. We will add a statement on this and refer to the results of current projects.

Technical Comments:

1. Grammar and Style:

- The manuscript is mostly well-written, but some sentences could be simplified for clarity. Some sentences are overly long and could benefit from being split to improve readability.

Thank you for this suggestion. We will pay attention to simplifying our text and shortening long sentences in the revision of our manuscript.

- Line 84: 9.7 C **should be 9.7°C**

Thanks for pointing this out. We will check our manuscript thoroughly to correct for such errors.

- Line 240: "The hydrological summers of 2018 and 2022 showed higher temperatures (17.6 °C and 17.0°C)" — revise the double "°" symbol.

Thanks for pointing this out. We will check our manuscript thoroughly to correct for such errors.

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2. Figure Captions:

- The figures are informative, but the captions could be expanded to better explain the relevance of the data presented. For example, Figures 8 & 9.

Thanks for this comment. We will revise our figure captions to include more information. For example in the caption for fig. 8 we will include information on the arrows, tables, colours etc. We will also increase the resolution of fig. 8. For figure 9 we will include information on the arrows and explain the relevance of Spreetunnel.

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3. In-text Citations:

- There are minor inconsistencies in the citation format throughout the manuscript. Ensuring that all references follow a consistent style would improve the presentation of the paper.

Thanks for pointing this out. We will check our manuscript thoroughly to correct for such errors.

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- 4. **Clarification on Data Availability:**
 - Some of the data sources, are not publicly available. It would be helpful to specify if this data can be accessed under certain conditions or if it remains confidential.

Thanks for this comment. We will include more information about the accessibility of data sets in a revised version of the manuscript.