

Interactive comment on “Water balance of selected floodplain lake basins in the Middle Bug River valley” by J. Dawidek and B. Ferencz

Anonymous Referee #2

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Manuscript written by Dawidek and Ferencz entitled “Water balance of selected floodplain lake basins in the Middle Bug River valley” quantified the water balances using standard water balance equations. After reading manuscript couple of times, I got an impression that manuscript needs much improvement in order to achieve its objectives. Author never linked clearly, the aims and hypothesis described in lines 8 – 15 to results, conclusion and discussion written in 10071 and 10072 needs considerable improvement. While formulations shown require units, equations 4 and 5 need re-writing. If reader simplifies these equations, then he will get $2X_I$ (inflow) in equation 4, and $2X_O$ (outflow) in equation 5. Probably author can justify this but certainly he needs to provide clear explanation and the used calculation method. Author did use excessive jargon to emphasize simple facts, which could have been written in much

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simpler language. In abstract, author should provide more scientific information from the work instead of providing the definitions. I think introduction section can be a better place for that information. Few words such as complexities have been used very often; readers would like to know the actual involved complexities. Authors mentioned about fluctuations of hydro chemical parameters, I never found any discussion on chemicals throughout the manuscript. Starting from the abstract, first sentence is written as “this study is the first attempt in the literature on the subject of comparing water balance equations for floodplain lake basins depending on the type of connections the lake has to its parent river”. I think in whole study there is only one water balance equation. Even if author thinks that each equation is different, author did not wish to compare the results of each equation. I can agree that author wanted to compare the water balance components; however, this study cannot be taken as comparing water balance equations. Author describes the several phases (i.e., potamophase, limnophase), it would have nice to see the time frame of those phases. The climate information of the study area is lacking. Many sentences are written without any substance i.e., beaver dam, radical change. I would list below the lines and page numbers, where I felt deficiency on writing. Page 10062: Line 1; line 5; line 7; line 10’ line 13; line 17; line 21; line 24; line 25. Either sentence change or further information is required in these lines. Page 10063: Line 9 (mostly, however); line 13 (hydro chemical parameter; high hydrological and seasonal dynamics). Author wrote water resources comparison in several places, and I am not sure if that is good term to write. Page 10064: Line 3 (calculations comparison of water resources), line 7 (hydrological diversity); line 9 (I am not sure if author clearly stated any standard approach). Authors need to provide units. While explaining equation, authors need to give information if P (similar for other parameters) is direct precipitation on the water surface. Somewhere authors should talk about the time period of events they intend to discuss. There are several inflow and outflow conditions but no relevance to the weather/climate of the study area. Page 10065: Line 3 (another factor ??); Line 5 (height and locations of beaver dams); Line 9 (type and degree of connections??); Line 10 (significantly small capacity??).

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In line 13 authors mentioned about hypothesis but never discussed it again. Either in Table 1 or somewhere proving the weather information about each study area can give more information to readers about the water balance. Sentence modifications required between 20 and 25. It is hard to understand that border between eastern and western Polish helped maintaining natural character of the lakes. Page 10066 (Section 3). In line 9, authors wanted to say that they did something special to find reliable results, however I was failed to find further materials on it. In line 14, authors have mentioned that periodical (even daily) observations are not sufficient to carryout water balance calculations because the time of flow of the water through a lake basin is shorter than 24 h (better reasoning are sentence deletion). While authors are using weekly flow measurement, monthly lake input and output water balance to get annual values, I do not understand the said problems or in other word preciseness of the study. Line 21: How authors sort out the slightly different problems mentioned in line 21. Authors need clear descriptions describing the phases and used equations. While in methods, author did try to emphasize the importance of equations (filling and draining) proposed but nothing is available in results, conclusions and discussion. Page 10067: Several sentences need modification (lines 13, 22). I would say authors need to reconsider writing equations 4 and 5 or better explanation describing how he used in the model. These are simple empirical equations, and slight changes can produce very different results. Author is encouraged to re-read, and modify the writing in order to make simple reading and should about jargon. Page 10070: Line 4 (underground lake basin's supply??? Table 2 indicates ground water inflow and outflow). I am not sure underground used throughout the manuscript is the suitable word. Line 17, 21, 25 (less stable). Page 10070: Thousand separators are needed to read numbers easily. Results needs to be written more convincingly and relating with the method and emphasize of the paper. Page 10071: Probably authors need to write the number relating with emphasize of the manuscript. Simple water balance quantity is less convincing. Page 10072 – 10075: Authors failed to bring the discussion coherently on the proposed topic. This section needs much improvement. Authors

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need to clearly indicate how they found the solutions, and what the solutions are. Further discussion is required about proposed objectives and hypothesis. Manuscript ends with the impression of incomplete.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/10/C5290/2013/hessd-10-C5290-2013-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 10061, 2013.

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