

Interactive comment on “Changing climatic and anthropogenic influences on the Bermejo wetland, through archival documents – Mendoza, Argentina, 16th–20th centuries” by M. R. Prieto and F. Rojas

D.A. Christie (Editor)

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Dear Dr. Prieto,

The reviewers have now commented the new version of your manuscript. As you will see both referees are agree that the present version have been notably improved, but still there are some points that have to be addressed before the potential acceptance.

With respect to Fig. 3, please add “X” and “Y” labels (i.e. “Year” and “Streamflow”, respectively) and indicate in the caption the mean of “10 per.” (with respect to the

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moving average red line). Also please follow the suggestions that a native English speaker check the manuscript, with a special emphasis on the abstract.

In order to proceed, please incorporate the reviewer’s comments and suggestions into a new revised manuscript and submit it again for consideration, together with the respective responses to each observation (see referee comments below).

Your sincerely, Duncan Christie Guest Editor

Referee #1

The manuscript has been notably improved and there are only minor questions that must be answered by the authors before publishing:

- Georeference of old maps: "The mean square error (RMSE) reached 15 to 45 mters... it is considered appropriate for working with historical maps". Please, justify this sentence.

- "These changing distances can reflect the growth and recession of the wetland over time". This sentence is repeated.

- Figure 3. I suppose that Mendoza river streamflow of the 20th century has been indexed to compare with historical indices. In that case, what is the correspondence between modern measures and the index ranging from -2 to +2? What is the loss of variance associated with this procedure? What is the uncertainty (error) associated with the index assignment?

- According to the authors "Those years with no reports or claims about the lack or excess of water, were considered as normal years". Here, the authors use the hypothesis that "absence of evidence" is equal to "evidence of absence". This hypothesis is not correct, unless they can affirm that the documentary sources were exhaustively investigated, and recorded all the events that occurred in the past. In particular, there is a suspicious lack of data at the beginning of the record, during the 17th century (Figure 3). The information density (i.e. number of events recorded by year, or by

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decade) has changed over time? In that case, what is the influence of this change on the calculations of the streamflow?

Referee #2

I have read the revised manuscript 'Changing climatic and anthropogenic influences on the Bermejo wetland, through archival documents, Mendoza, Argentina 16th – 20th centuries' (noting that this is a different title from the original). As suggested by the reviewers, the authors have clarified the methodology to emphasise that the primary sources were the historical documents, complemented by the maps. They have also redrafted the Introduction, which is a lot clearer than the original. I do however, still have concerns about sections of the text where things are repeated and the order of the figures. There are also places where I think changing the words used would improve the clarity of the text (e.g. replace the term 'ancient maps' with 'historic maps', replace 'heavy floods' by 'major floods').

Figures. The current order in which the figures are referred to is: 1, 2, 5, 4, 3, 6, 7, 8, 9. These should be renumbered from 1 to 9. There is no separate list of Figures (with captions).

As the supplied text had no page or line numbers, I am going to refer to page numbers of the main text (excluding the abstract) from p. 1 (Introduction).

p. 1 para 4. There are 2 paragraphs here beginning with 'This'. Here it would be better to give the name of the wetland.

p. 2, Study area, para 2, line 6 Should 'catchment basin' be 'headwaters'? Same para, penultimate sentence, what does 'module' mean? Should that be 'discharge'? Last paragraph, meaning of first sentence not clear.

p. 3 line 3, for slope direction, please compare with text on page 11, para 5. Final paragraph, please give English names for plants e.g. reeds (totora), rushes (juncos) as well as Latin names.

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p. 5 para 1, line 6 (and elsewhere) what is meant by 'swellings'? why are these not covered by floods?

p. 6 para 3 (starting Otherwise, the archival....). The text in the last sentence repeats information already given. (I'd also start this paragraph 'The archival....'). line 3 in this paragraph, replace 'revised' with 'reviewed'.

p. 7 Overlay and Georeference of old maps. There is repetition here in paragraphs 2 and 3 (re geo-referencing). Replace 'georeference' with 'georeferencing'.

p. 8 There is a lot of repetition in the last 2 paragraphs.

p. 9 The text in the first paragraph repeats information already given.

p. 11 para 2, line 1, what is meant by 'popular acclaim'? popular protest? Line 3 – what is 'fang'?

Para 3, 1st sentence, what is 'trowel area'? cultivated area?

Para 4, I'd link this to end of para 3, also text here is repeated in p. 12, para 1

p. 14 para 4, last line, replace 'only in' with 'just in', or 'in Guaymallen alone'.

p. 15 para 2, first line – suggest 'great climatic variability'.

p. 18 para 2, suggest changing 'in the beginning of the' to 'early in the' line 3 delete 's' from end of floods last sentence suggest 'The area of the wetland became less and less....'

p. 19, para 2, suggest 'Nevertheless, the modern water table....'

With respect to the Abstract: This was not labelled as such, but I assume this is what it is. I'm afraid I found this really very difficult to follow. I would move the first sentence of para 3 ('This paper examines...') to the start. I'd then put all the text giving a summary of change in the wetland area (current para 1 and 2, plus para 3 after first sentence). After this, insert the text about the methods used, moving the text about the use of the

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historic maps forward from the end. Finish with what is now the last paragraph of the first page of the abstract.

I feel that the paper still needs some work to make it suitable for publication. The more structural issues are outlined above. The abstract needs to be completely rewritten. Although I fully appreciate the difficulties of writing in a second language, I feel that the text still needs some work in this regard. I strongly suggest that either the authors or the editors seek some input from a native English speaker as this would benefit all parties and help to get the authors' results across with maximum possible clarity.

Interactive comment on *Clim. Past Discuss.*, 7, 3775, 2011.

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