

# ***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***

## **Anonymous Referee #1**

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The manuscript is an interesting work on fluctuations in the extent of a wetland in Argentina, near the city of Mendoza. The authors try to relate this variable with climatic fluctuations in the region. They argue that “the novelty here is the archival use of maps to reconstruct changes in area and their linkage to natural archives of related climate changes and historical documents”. However, only four maps are provided, corresponding to the years 1802, 1861, 1896, and 1903. I have doubts on the possibility of reconstructing changes in area using only four maps. Each map may correspond to a particular moment, and the reconstruction of extent fluctuations seems very ambitious

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with this information. Anyway, maps would be complementary material supporting a reconstruction based on other type of proxy data (including documentary sources). How have the authors used satellite images? What about archaeological data? The manuscript does not offer information on these data. The grow and recession of the wetland were measured using the “straight-line distance between two reference points –the Pedro del Castillo square (...) and the western edge of the wetland”. This measure is not precise. How do the authors determine the location of the western edge of the wetland? Please, clarify. What was this distance in 1896? The area measured in ha seems more appropriate. Figure 2 is misleading. According to the authors, “effective drainage works only began in the 1860s”. Therefore, you cannot compare the frequency of extreme high and low streamflows in the periods previous and subsequent to this date. Accepting the statements by the authors, since 1860 onwards anthropogenic influence was important, and the changes in the streamflow are not exclusively linked to climate variability. Although the authors quote the papers where this reconstruction is presented, it would be necessary to add a more clear description of the reconstruction procedure based on documentary sources. For instance, have they defined an ordinal index to account the events? Have they accounted the frequency of events per decade? Why decades and not other time periods?

Please, include “(Fig. 3)” in page 3782, line 7, and “(Fig. 4)” in page 3783, line 15.

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