Email from the Editor: https://mail.google.com/mail/u/1/#inbox/162d6382a7ca88b9

Reviewer #1 Evaluations:

Science Category (Required): Science Category 2

Presentation Category (Required): Presentation Category A

Key Points (Required): Yes

Reviewer #1 (Comments to Author (shown to authors):

I don't know if my annotations in the file system here are actually working, so here are my additional notes and comments:

???

Overall this paper is good and should be published. I have some minor comments that need to be addressed before a final is accepted.

A couple of times (page X-2, line 16 and in the conclusions) the authors describe the primary mechanisms of impacts to be a "smaller rain to snow" ratio when I think they mean a "smaller snow to rain" ratio. Please review this wording carefully throughout the paper: if, as I think is the case, rain is increasing with temperature, then the "rain to snow" ratio is going up, not down.

Thanks for correcting this. (Updated)

Page X-3, line 26: wasn't the 2016-17 year the wettest on record (not "one of the")?

Thanks for correcting this. (Updated)

Page X-3, line 38: define what the "historical record" actually is: what years?

Here, “historical record” refers to the historical time-period since 1980s. (Updated)

Page X-3, line 41-43: These "previous studies" span decades. Say so. Also, the sentence is confusing: you mean "warming reduces snow water equivalent and SHIFTS TIMING OF peak spring streamflows..." right? The way it is written, it implies it "reduces" peak spring streamflows and I don't think that's what you mean. Also, add citations from the earliest examples of these "previous studies" like the late 1980s work of Gleick or Lettenmaier or others.

Thanks for pointing out these. (Updated)

Page X-4, line 55-57. The paper would benefit from a sentence or two explaining that "Flooding risk" also is a function of how water is stored in the reservoirs and how those reservoirs are operated. It isn't just a function of if Pr falls as rain rather than snow.

(Added)

Page X-5, line 80. This is NOT the official "water year." That runs from October 1 to September 30th. Clarify.

Thanks for spotting this. (Corrected)

Pages X-6 to X-8: I cannot adequately comment on the appropriateness or application of the methods. I hope another reviewer can. For example, does it matter if the temperature anomalies applied are just the average monthly warming, or should it use changes in the daily min/max? Similarly, I'm not sufficiently familiar with the appropriateness of the downscaling approach to comment.

Not sure how to respond to this.

Page X-12, line 214: you say the severe flood events "resulted" in the Oroville Dam problem. It's probably more accurate to say it "contributed" to it.

Thanks for the correcting. (Updated)

Reviewer #2 Evaluations:

Science Category (Required): Science Category 2

Presentation Category (Required): Presentation Category A

Key Points (Required): Yes

This is a good manuscript. The methodology and data used in the analysis are reasonable. I would recommend accepting the manuscript to publish in Geophysical Research Letters, but with few clarifications listed below.

1) Please clarify the water years definition in section 2.1

Clarified.

2) Noah-MP model was used to simulate hydrologic variables. While the Noah-MP model is appropriate for the study, but the model performance over the calibration and validation periods were described. It would be good to show if the calibration procedure guarantees that physical processes are well represented especially in the mid to high elevations where alterations in runoff pattern are most likely to be affected by climate change.

To be dicussed.

3) I am not completely agreed with the conclusion based on the explanation and evidence presented in the manuscript that human activities may have exacerbated the Oroville Dam spillway overflow that occurred in February 2017. More explanation is needed.

To be dicussed.