

Interactive comment on “Attribution of the role of climate change in the forest fires in Sweden 2018” by Folmer Krikken et al.

Folmer Krikken et al.

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Anonymous Referee #1 Received and published: 16 September 2019

Review of Manuscript submitted to NHESS

Dear Authors, first thank you for a very well-written manuscript about the role of climate change in the forest fires in Sweden 2018. I found the manuscript very interesting; it summarizes quite well the implications of your results and your conclusions are well-defended by the analysis you present. This paper is entirely suitable for publication in NHESS, I have only a few minor suggestions and corrections.

We thank the reviewer for the positive feedback. We address the individual comments below. A PDF of the response is attached.

1-1 Line 35. I would suggest to include a reference (e.g. Drobyshev et. al. 2012) after “Though forest fires are common in Sweden”

We have added the reference as suggested

1-2 Lines 41-54. There is a recent publication that could be acknowledged: Williams, A.P., Abatzoglou, J. T., Gershunov, A., Guzman, I., Morales, J., Bishop, D. A., Balch, J.C.K., & Lettenmaier, D. P. (2019). Observed impacts of anthropogenic climate change on wildfire in California. *Earth's Future*.

We have added the reference as by including the line: ‘Williams et al. (2019) found a strong influence between recent increase in forest fires in California and the positive trend in vapor pressure deficit cause by anthropogenic climate change.’

1-3 Line 107. Please change “it provides” to “they provide”

We have changed the sentence as suggested

1-4 Line 108. Please change “dataset” to “datasets”

Corrected as suggested

1-5 Line 199. Please can you better explain why JRA-55 performs differently?

JMA-55 performs differently because it has a longer time record since it starts in 1955 where the other datasets start in 1979 or 1980. The uncertainty estimates of the return times largely depends on the length of record. All other reanalysis products cover a shorter time period, thus their uncertainties are larger. Importantly, the JRA-55 uncertainty range is contained within the uncertainty range of the other reanalysis products, so the estimates from JRA-55 and the other products are consistent. To improve the wording we have changed the sentence from ‘... (except JRA-55 that includes more data) ...’ to ‘...(except JRA-55 where the variability is based on a 25 year longer time-series)...’

We would like to sincerely thank both reviewers for many stimulating comments, which

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helped improve the quality of presentation.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-206/nhess-2019-206-AC1-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-206>, 2019.

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