

## Review 1 (Neil Macdonald)

This is an interesting and enjoyable paper that presents new research on long-term droughts in South East England. I have attached an annotated version of the manuscript with suggested edits both in terms of language but also suggested additional considerations. I hope the author finds these comments helpful, the paper would also benefit from a detailed proof read, as in several places sentence structure / length needs reviewing.

**Response:** I would like to thank the reviewer for taking the time for providing the annotated pdf. I will address the suggested changes in the revised paper.

Key points to address: Consider renaming the paper . . . summer droughts in South East England . . . as the focus is on SE, as acknowledged.

**Response:** The title of the paper will be changed to 'southern and eastern England'.

I would encourage the author to consider the full breadth of drought reconstruction work undertaken for England, with several papers not mentioned, some of which cover the area of study (e.g. Spraggs et al., 2015 and Todd et al., 2013). This will help contextualise the work better.

**Response:** I thank the reviewer for that suggestion and I will include reference to these articles in the introduction.

The section on 1540 would benefit from strengthening with contemporary accounts, these from experience are limited, indeed only accounts are from London used (e.g. documented in Wetter 2013), an additional source for London may be present in the Cramner register, concerning call for prayers from Henry VIII. No evidence from outside London (SE) from a contemporary source?

**Response:** The 1540 event and available printed sources are described in detail in Pribyl, K., Cornes, R., Drought in medieval and early modern England. Part 1. The evidence, Weather (2020). The sources provided there include the commissions for prayer by the king. The information listed in Lowe's Natural phenomena and chronology of the seasons' (1870) as coming from outside London is misplaced and misdated as pointed out in the abovementioned paper. The citation of this paper will be moved from the footnote relating to 1540 into the relevant text paragraph.

Take care with statements on droughts in particular climates, drought is equally liable to occur in SE as NW England, however the impacts may differ.

**Response:** I note that the reviewer has highlighted such sections in the annotated manuscript and I will change sections as indicated.

Rename the 'Drought over the centuries' section, as this seems to be more about source material through the centuries than drought over the centuries.

**Response:** This section aims to give a general overview of droughts per century and their documentary basis; I have changed the title to 'An overview of droughts 1200-1700'

I think some reconsideration of Section 6 adaptation measures is needed, some of this section addresses changes, but it is not clear how this differentiates from changes that were already being made/ how droughts drove these adaptations, rather than just

coinciding with these changes. If you are making these links they need to be explicit, e.g. London New River first proposed in 1602, so not linked to drought of 1609 when first opened.

Response: I will add a clarifying phrase, that – as in the Plymouth example – the wish for an improvement of the water supply might have been long standing, but drought years raised the need for better water supplies suddenly and decisively, and hence likely triggered the execution of planned costly infrastructure projects. The project of the New River lingered around for years before the project was begun in the drought year 1609, and was then pursued over the largely dry period – with royal involvement during the driest part - until it's completion in 1613. It is not unreasonable to assume that existing aspirations to improve the water supply in urban settlements due to a strain created by the growth of population or industry received a considerable impetus, when drought years endangered or diminished the availability of water.

The author may like to add a sentence on the utility of this paper on better understanding droughts today? Value of such information in water resource plans.

Response: I will add a sentence in relation to the utility of establishing a pre-industrial baseline of droughts in England. However, I feel that incorporating information about the use of the historical information for modern planning would deserve a detailed approach that is not possible in this paper.

I have suggested additional references on the annotated manuscript.

Response: I have already reviewed these references and will add as appropriate.