

Interactive comment on “A survey of the impacts of summer droughts in England, 1200–1700” by Kathleen Pribyl

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This is an interesting and timely paper, and I recommend that following minor revisions it should be accepted for publication.

In keeping with the comments from reviewer 1, I think the author should re-frame the paper to be explicitly about S.E. England, in addition to amending the title to reflect this focus, clearer framing in the introduction and section 2 could be added.

Given the centrality of the sources to the paper, would the author be able to include Table S1 in-line in the text of the paper? If not in full, an amended or overview version would help the reader interested more in the historical context of the sources in gaining a quick overview of the kind of narrative sources used in the study.

C1

In section 6 I would like the author to add a paragraph reflecting on the ability to assess the direct causality of adaptation measures, were they measures triggered solely by drought events, were they catalysed by meteorological conditions etc.

As per the corrections and comments on the attached PDF the author needs to give the manuscript a thorough proof read and review prior to resubmitting. In addition to minor amends on typographical errors, the author should ensure all sentences and paragraphs are clear, avoiding long and unwieldy sentence structures where possible.

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C2

A survey of the impacts of summer droughts in England, 1200-1700

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Abstract. Droughts pose a climatic hazard that can have a profound impacts on past societies. Using documentary sources, this paper studies the occurrence and impacts of spring-summer droughts in pre-industrial England from 1200 to 1700. The types of records, source availability and changes in record keeping over time are described, and an overview of droughts in those 500 years is provided. The focus lies on a structural survey over the drought impacts most relevant to human livelihood. This includes the agricultural and pastoral sectors of agrarian production, health, the fire risk to settlements and the drop in water levels or dwindling of water supplies. Whereas due the specific characteristics of wheat cultivation in medieval and early modern England, the grain production was comparatively resilient to drought, livestock farming was under threat when rainfall fell noticeably below average. The most important problem in warm and dry summers, however, was the risk to health. Partly steeply raised mortality levels were associated with these conditions during the study period, because malaria, gastrointestinal disease and plague showed an affinity to heat and drought. Adaptation strategies to reduce the stress posed by summer droughts are included in the study.

1 Introduction

The occurrence of drought across the British Isles has attracted the attention of meteorologists since the nineteenth century. G.J. Symons' work on hydrometeorology is well known (1887). He was not only studying the rainfall patterns of his own time by establishing an extensive rain gauge network across the British Isles (Jones, et al. 2007), but also investigated the occurrences of droughts over the past on the occasion of the 1887 drought (Symons, 1887). Brooks and Glasspoole (1928) based their work on past droughts on the catalogue of Symons. After them most research has been done focused on the instrumental period, as by Jones et al. (1997), Briffa et al. (2009), Cole and Marsh (2006) and Marsh et al. (2007). Recently Ireland's drought history was investigated by Wilby et al. (2016), Murphy et al. (2017) and Noone et al. (2017). Some of these works also include documentary data which is used for an evaluation of the drought conditions and impact research (Cole and Marsh, 2006; Murphy et al., 2017; Noone et al., 2017).

Drought in the pre-industrial period has received comparatively little attention. Using information in the form of direct weather references or proxy data in documentary sources, drought occurrence in England was included in the studies by Jones et al. (1984), Ogilvie and Farmer (1997), Pribyl (2017) and Pribyl and Comes (2019a,b), and for Ireland by Dooge (1985). Over the last decades a new source for the study of droughts on the British Isles extending back to Antiquity has become available: precipitation reconstructions based on tree-ring data (Cooper et al., 2012; Rinne et al., 2013; Wilson et al., 2015). These data

Fig. 1.

C3