

## ***Interactive comment on “The BernClim plant phenological data set from the Canton of Bern (Switzerland) 1970–2018” by This Rutishauser et al.***

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rutis@giub.unibe.ch

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Anonymous Referee #1 General comments In their Data Description paper, 'The BernClim plant phenological data set from the Canton of Bern (Switzerland) 1970–2018' Rutishauser and colleagues describe long-term phenological data from three tree species and one herb collected since 1970 (and continuing today). The data are relatively unique in having the same observers at most sites over the (long) observation period; and thus provide an important comparison for data collected by varied observers over time (which is far more common, based on my experience). The authors review some basics of the data collection, quality control on the data and provide some

C1

simple but very nice visuals of the data, including some basic information on how they capture extending growing seasons with climate change. These data add to one of the better areas of the world for high-quality long-term data and are important for understanding climatic control on plant phenology in the past and what it means for plants in a future, hotter planet.

Specific comments This paper is generally very well written and easy to read, but I was confused about a few things that I think minor re-structuring could address.

We appreciate the general comments of the reviewer and thankfully address specific comments and suggestions below.

(1) Given that non-first dates were flagged in quality control I think the data collection must have been focused on first events. However this was not clearly stated (at least not clearly enough for me). If the data are focused on first events, please state it more clearly. If not it would be helpful to know why non-first dates were flagged.

We assume that there exists some confusion in the terminology. "First date observations" can be defined as the first flowering/budburst of a plant. This would relate to the 1% of a phenological event. In our dataset, we find observations that recorded the date when 50% of the flowers/buds opened. Thus, non-first events were flagged when they relate to a repeated observation of 50%.

(2) I would have appreciated a little info on who the observers were and how they were found and enlisted in the project.

We added the following sentence "Overall, more than 200 volunteers were recruited for observing in 1971 through the teacher training program of the Institute of Geography. A large number of observers have a training in public school teaching or family doctors, and have a strong, intrinsic motivation for observing natural phenomena and processes."

(3) Somewhat related to (2) I would move up the Jeanneret & Rutishauser 2012 ...

C2

For example, an overview of what you will cover in the 'observation network and data' could be followed by 'more details, such as on how observers were located, trained and details on [insert a few more important details covered in other paper] are given in Jeanneret & Rutishauser 2012.

The reference is moved and additional information added in the text as suggested

(4) I additionally wondered if the trees were in forests, cultivated systems, clonal gardens or what?

Added in the text. Most sites and the plants were observed in cultivated systems. No clonal individuals were observed

Technical comments - If possible with the journal's style guidelines it would be nice to see the species names italicized in the abstract. done

- I would have liked a quick explanation of what regime shift was referenced in the abstract. For example, instead of 'the regime shift in the late 1980s,' it could read 'a regime shift in the late 1980s observed across numerous other phenological and meteorological datasets.'

Done

- Given the focus on 'first dates' I would reword line 74 "First observations were performed in 1970" to 'Observations began in 1970.'

done

- Exposition is often called 'aspect' in my world, I might mention this once in the abstract and once in the main text: exposition (aspect)

done

- Line 103: 123 500 data collected over what period of years? The number isn't that meaningful without a time-window.

C3

We include "During the intensive initial phase of the network"

- Robert Brugger is an expert in what?

We added to the text "... an expert in biology, plant physiology and phenology (Robert Brügger)"

- Line 106: extra period at end of sentence done

- day of year is inconsistently spelled (day-of-year, Days of Year etc.) throughout manuscript; whichever seems fine to me so long as it is consistent.

We checked the complete manuscript and used day of year (DoY)

- Line 137-8 and 160 - 'the beech' and 'the Apple tree' sounds a bit odd, it should be apple, not Apple I believe and I think 'the' may not be needed. I suggest instead "...leaf colouring of beech and 22.7% concerned flowering of apple."

done

- Figure 6: The colored versus black lines are not well explained (I assume black means some- thing different? As 5 colored lines are mentioned in the caption and the black line is a 6th line, I believe), nor is there information on the red dashed line. I would also mention the data gap in the figure.

done

- Figure 7: For consistency I think it should be 'hazel' and not 'hazelnut.'

done

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-101>, 2019.

C4