Overall, the authors have done fair job addressing my comments. However, there are a couple issues that I am not completely satisfied with.

1. The issues of how/why CFSR was used has now been brought up by both reviewers and the editor. The editor has actually suggested a quick comparison between CFSR and other data sets and reviewer #2 has also suggested this. I agree that the overall spatial patterns of correlations *might* not change, but we don't know this for sure. I would also encourage the authors to provide a basic analysis to justify data choice. Simply stating that CFSR is used with ALEXI does not seem like enough.

*The CFSR is a high-quality reanalysis dataset that has been used by many studies and represents an important improvement over previous generations of reanalysis datasets (such as NARR). In our previous revision, we added two references that showed that CFSR surface reanalyses are of comparable quality to other reanalysis datasets. We have added three more references to this paragraph that showed similar conclusions. The revised manuscript now states:*

*"Regional verification studies, such as those performed by Bao and Zhang (2013), Lindsay et al. (2014), Sharp et al. (2015) and Essou et al. (2016), have shown that the accuracy of the CFSR near-surface variables are comparable to those from other reanalysis datasets and represent an important improvement over previous generations of reanalysis datasets. Fuka et al. (2013) have shown that when CFSR data was used to force a watershed model, that it produced stream discharge simulations that were as good or better than models forced using weather station observations. The use of reanalysis data introduces some uncertainty to the evaluation performed during this study but it has the advantage of providing uniform spatial resolution across the entire region."*

*We agree with you that there could be some sensitivity in the absolute magnitude of the correlations to the choice of reanalysis datasets; however, we reiterate that this is not expected to have a material impact on the regional and seasonal correlation patterns or on the relative importance of each variable. Because other studies have shown that the CFSR surface reanalyses have comparable accuracy to other reanalysis datasets, we hope that the reviewers will be satisfied with these revisions.*

2. I have to disagree with the authors regarding what period of record to use for standardization (see reviewer 1 comment #4). The authors state in the reply that it takes at least 30-years (that number is debatable to this day) for a stable SPI. So wouldn't at least 30 years be needed for a stable ESI? My main argument is that trends in the individual drivers will have a big impact on normalization when using different periods of record. This will be particularly important for things like temperature and dew point (and any other variables that are related to temperature). A "low" normalized temperature value with a record of 2001-2015 may not be low at all when using the 1979-2015 record. We all know the climate has been changing dramatically over the past several decades, so this is a big deal to make the study robust. For me, these periods need to be consistent for the paper to be published.

*To address the reviewer's comment, we computed the correlations between the 4-week ESI and 4-week SPI when the SPI anomalies were computed using data either from the full period of record for the SPI (1948-2016) or from the much shorter ESI period of record (2001-2016). In both cases, the correlations were computed using data from 2001-2016. The correlations between each dataset, along with their differences, are shown in the figure below. Overall, it is apparent that the correlation pattern is robust and that there are no discernable differences in the correlations across the U.S. Because this example represents the most extreme case in terms of differences in periods of records between the various datasets, and the differences between these analyses were very small, we expect the differences for other variable combinations to be of similar or less magnitude. Because of this, we do not think that it is necessary to redo the entire analysis so that the same periods of records are used for all datasets.*



correlation: 4 week ESI & 4 week SPI (%)
April—Sept
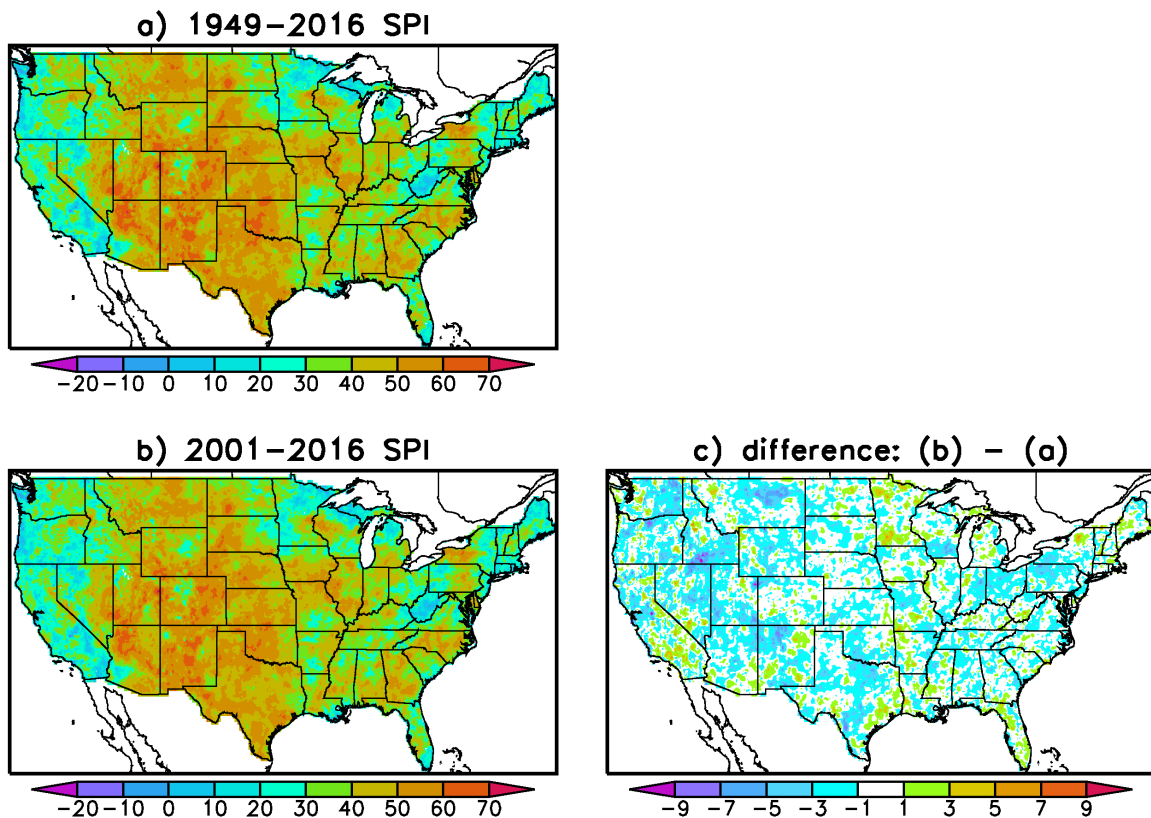
I will recommend the paper for publication once the normalization periods are consistent. The CFSR issue probably should be addressed but I realize that is a lot of extra work outside the scope of study. The authors also provide two new references pointing at CFSR validation studies.

*We have performed additional analysis and have concluded that it is not necessary to redo the entire analysis (see above comment). We hope that the reviewers agree with this conclusion.*