

Overall: Good effort, good compilation, good description, valuable to many users.

The authors would like to express our appreciation of your valuable comments towards improving our manuscript. Your effort has been acknowledged in our revised manuscript.

Comments:

1. Colors of the source databases do not show up in Fig 1b, partly due to color selection and partly due to very low numbers from several sources. Consider better ways to convey this info?

Response:

Thanks for your comments. It is due to the dominance of one or two databases (i.e., FEDDB and NWS reports). In order to make all discernable, we applied log transform to event numbers and then replotted as below.

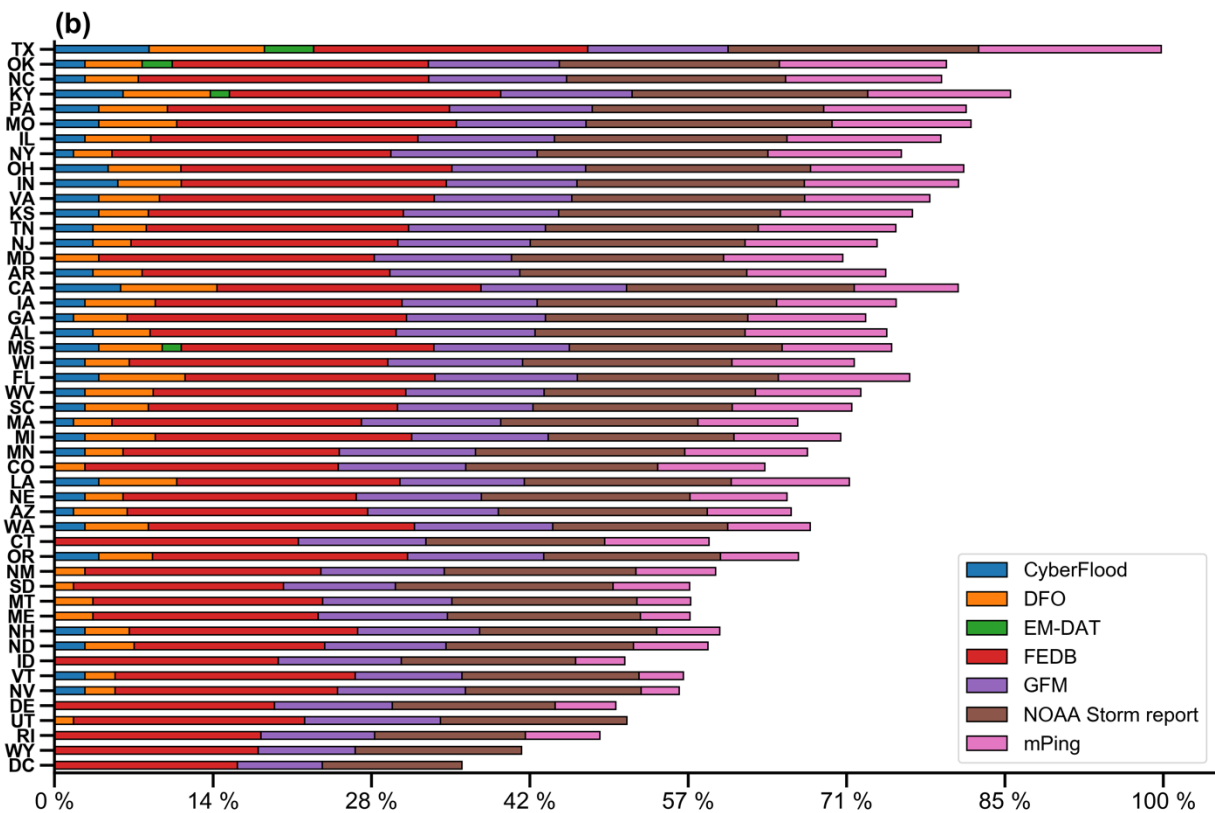


Figure 2 (b) fractions of logarithmic event numbers of each candidate database to logarithmic total event numbers.

2. Somewhere, perhaps a table in an appendix, match the HUC4 individual codes to named river basins or flood regions?

Response:

Thanks for your comments. We re-generated the Figure 3 as follows. HUC4 basin names are shown next to the bars.

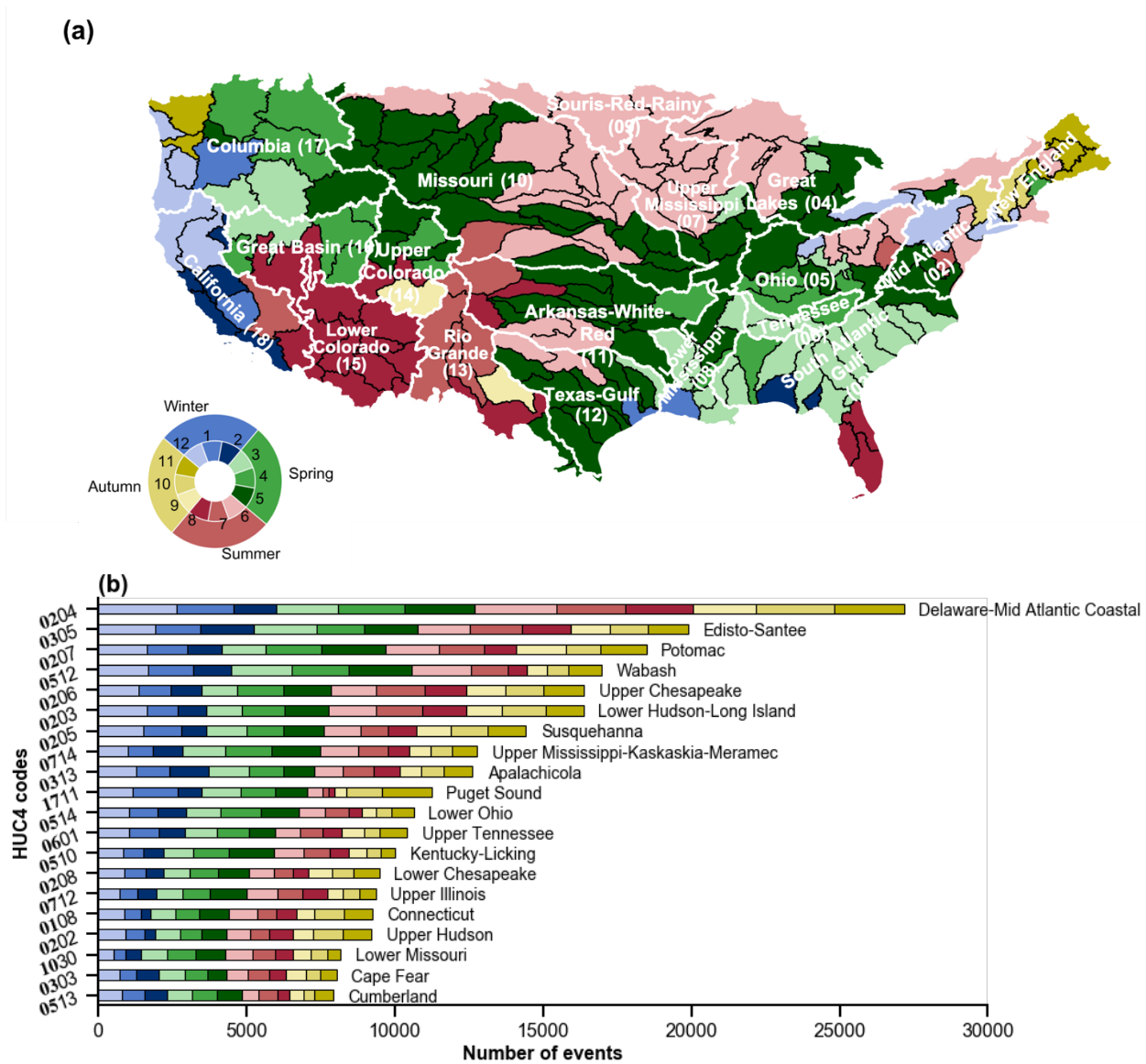


Figure 3. (a) Map of months with largest flood occurrence in major U.S. watersheds (Hydrologic Unit Code 4). (b) flood occurrences of the top 20 HUC4 basins (HUC2 codes in bold), grouped by months.

3. Absence of any uncertainty estimates represents a substantial limitation. Authors focus, quantitatively, on numbers of events, but virtually every parameter - including location - listed in Table 2 exists within a substantial uncertainty range. Need expanded discussion of uncertainties! Which could lead to recommendations for reducing said uncertainties (e.g., formal record-keeping, systematic enhanced remote sensing, new guidance for citizen observers). Perhaps add an uncertainty column to Table 2? Even on log scale, bars and trendlines in e.g., Figure 6 have substantial uncertainty? Most users listed by authors will want or need uncertainty information. How to reduce uncertainty going forward to better quantify trends?

Response:

Thank you for your comments and suggestions. For each candidate database, we complete uncertainty discussions such as geographic location, flood reporting, etc. in Section 2. However, it is difficult at this stage to assign data uncertainty levels to our merged product. First, it is subjective to decide which report weighs more over the others. For instance, should we trust more on witness reports or gage readings? Witness reports have uncertainties in reporting the geographical coordinates due to privacy issues, such as the Twitter data being discussed in main text. In addition, some falsely identified reports possibly exist because of internet hacking. Stream gage, although managed by human kinds, is likely to malfunction during extreme flooding events such as Hurricane Harvey. Therefore, we think the appropriate way here is to discuss more uncertainties of our database instead of assigning uncertainties quantitatively or categorically. Beyond that, we put forward recommendations that each flood database at its development stage, should consider or include uncertainty information for users. Therefore, it is more reasonable for a compiled database to also include that information. As a part of future work, we will consider ways of incorporating uncertainty measures from individual database and harmonize them into one.

L.314 - “Second, the uncertainties exist in each candidate database. The crowdsourcing dataset such as web-based may be less reliable because of lack of stringent data scrutiny, especially for studies that require precise flood locations. Developing new guidance for citizen scientists is a remedy. The instrument uncertainties are subject to confined locations such as stream gauges and technical algorithms to retrieve flood information such as remotely sensed observations. Algorithm developers should take into account how to quantify uncertainties in addition to the end product. The flood reports from government agencies are relatively less uncertain. Therefore, it is highly recommended that users select the candidate databases that fit to their research scope. We also encourage each flood database, during its original development, produce uncertainty measures quantitatively. In a future work, we will consider ways of incorporating uncertainty measures from individual flood database and harmonize them into one for delivering comprehensive flood information.”