October 1, 2012

Dear Mike Bostock and Shan Carter,

I recently visited The New York Times’ “Drought and Deluge in the Lower 48” visualization to explore trends in droughts over 118 years of record-keeping in the U.S. I enjoyed the webpage and am writing to express some comments and suggestions about the display and interaction that I thought you might appreciate.

Visualization Comments:

● I liked being able to see drought history for over 40 years at once. However, when I first came to the page I felt a little overwhelmed by the amount of data presented. Since the data is not displayed contiguously (there are line breaks between each row of 10 years), it took me a moment to realize that the rows were connected. I initially thought it was just displaying the years around major droughts.

● I appreciated that there was text that described the periods of intense drought. However, these historical explanations also occluded the labels for the affected years.

● I enjoyed being able to see the percentage that was in moderate to severe drought by mousing over the colored bars. But I would have liked to see other percentages: for instance, the percent that was not in drought, or the percent that was only in severe drought.

● I liked being able to isolate categories based on the Palmer Drought Index by mousing over the index at the top right of the visualization. But since my screen was small, and the only way to isolate categories was to keep my mouse hovering over the colored index, I was unable to filter by Palmer Drought Index and explore the data at the same time.

Visualization Suggestions:

● Providing an overview of the data instead of having it all visible immediately might be a way to make the visualization less overwhelming. For example, maybe first grouping the data by averages for each year, then allowing the user to zoom in and see the per month data.

● Adding labels for each row (e.g. “1970 - 1979”) could make the organization clearer.

● Moving the historical information below the timeline may make it so that the historical explanation is displayed but does not cover the labels for years:

   ![Visualization Screenshot]

● Allowing the user to click on a time period to see a tooltip containing more details might be a way to make information like the percent that was extremely moist more available.

● Making the Palmer Drought Index such that clicking would “lock” what categories are isolated could enable a user to both isolate categories and still explore the data.
Suggestions for new features:

- The text describing what areas were worst hit definitely piqued my interest. I thought it would have been nicely supplemented with regional drought information, perhaps on a map display. I think being able to mouseover months on the display and see a map displaying drought severity by state during that month would allow a user to gain interesting insights, perhaps something like this (from NOAA's National Climatic Data Center):

![Palmer Drought Severity Index](image)

From NOAA's National Climatic Data Center

Again, I greatly enjoyed using your visualization and appreciated how it allowed me to quickly identify and explore trends in droughts. I hope that my comments will be taken under consideration and look forward to exploring future data sets from the NY Times.

Sincerely,

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