

HUC1_01022500

Katherine Schlef

November 26, 2018

Gage Information

HUC: 1

USGS gage ID: 01022500

Latitude: 44.608; Longitude: -67.936

Catchment area: 227 square miles

Catchment elevation: 44.2 feet

Data availability (66 water years): 10/1/1949-9/30/2014

Flood Information

Mean Flood Date: 03/12

Flood Seasonality Index: 0.584

Table 1: Peaks-over-threshold floods (record flood bolded)

Date	Streamflow (cfs)
1950-11-28	7150
1961-05-28	9490
1969-12-28	6760
1976-04-03	6340
1989-05-13	6790
1993-04-13	6470
1998-03-11	6550
2007-04-18	6370

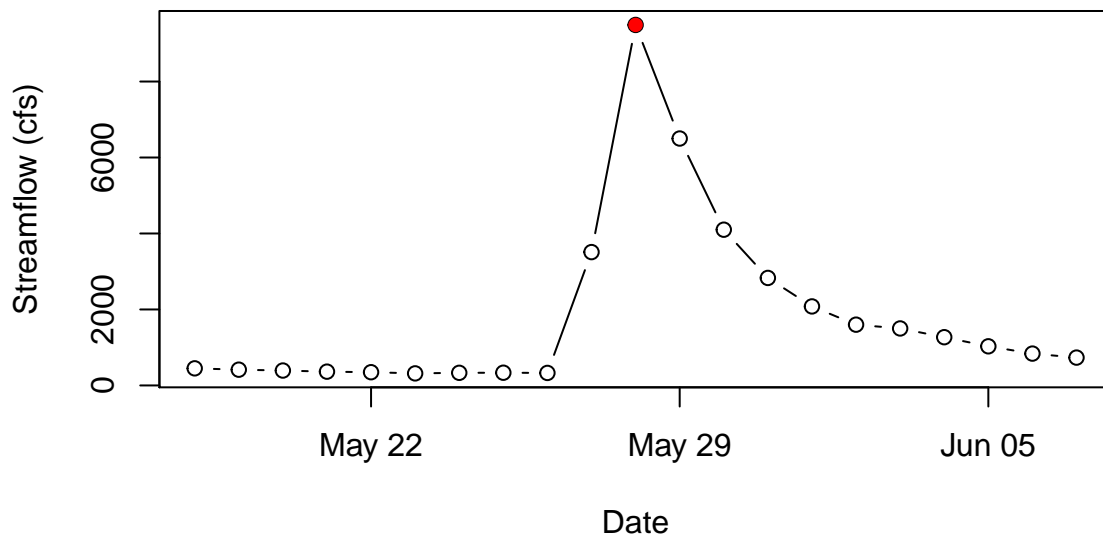


Figure 1: Streamflow at time of record flood (record magnitude in red)

Reanalysis Data

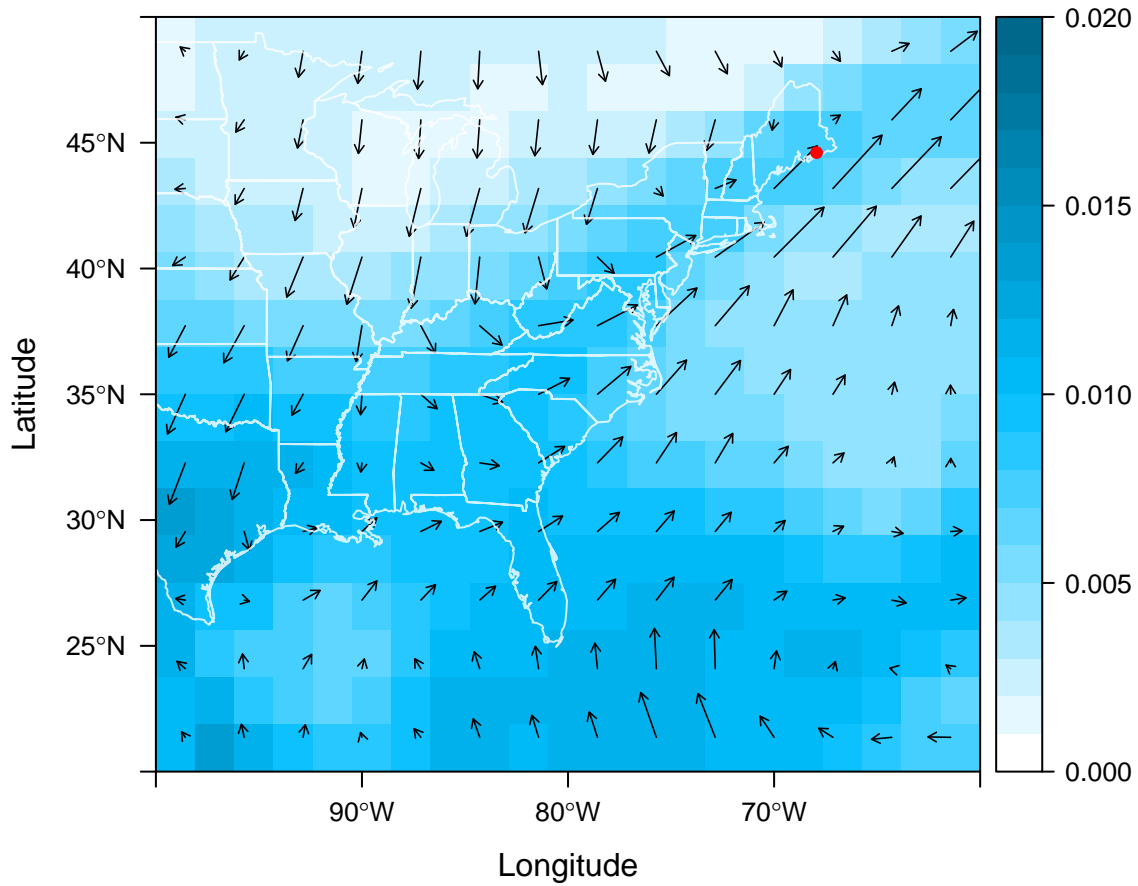


Figure 2: Reanalysis climate data two days before record flood at 850 mbar where vectors are wind (units m/s, multiplied by 2) and color field is specific humidity (units kg/kg) (red dot is gage location)

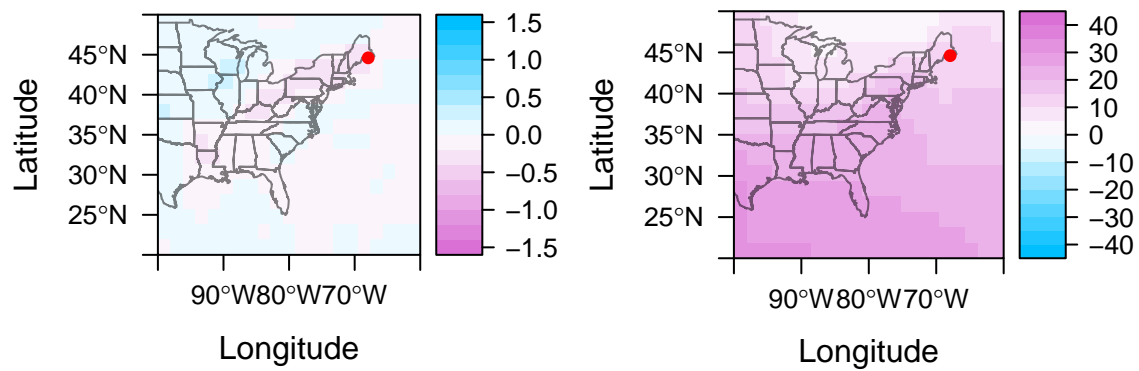


Figure 3: Reanalysis climate data two days before record flood (left) omega at 850 mbar (vertical velocity in pressure units Pascals/s) and (right) air temperature at 1000 mbar (units deg C) (red dot is gage location)

Hurricane Data

No hurricane (Figure 4 not created)

Extreme Precipitation Data

No extreme precipitation/data not available (Figure 5 not created)

Tropical Moisture Export Data

Data not available (Figure 6 not created)

Historic Report Data

No data

Self-Organizing Map Results

Self-organizing map classification of cause of record flood: hurricane

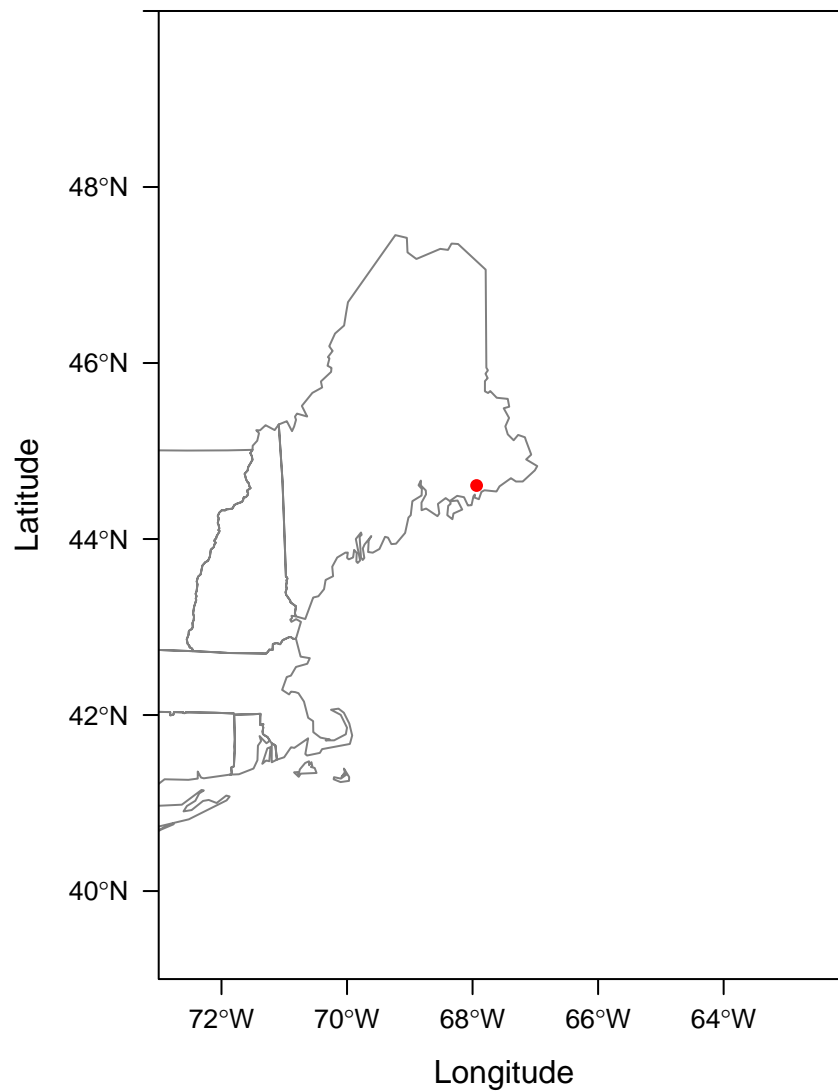


Figure 7: Event (1961-05-28) based on self-organizing map analysis (red dot is gage location, no other gages included)

Best Guess

tbd

References

To cite this work or for details regarding the analysis

- Schlef et al. (n.d.). Atmospheric Circulation Patterns Associated with Extreme Floods in the Contiguous United States.

Data for the “Gage Information” and “Flood Information” sections was obtained from

- U.S. Geological Survey (2016). National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed Nov. 1, 2018 at URL <http://waterdata.usgs.gov/nwis/>

Data for the “Reanalysis Data” section was obtained from

- Compo, G. P., Whitaker, J. S., & Sardeshmukh, P. D. (2006). Feasibility of a 100-year reanalysis using only surface pressure data. *Bulletin of the American Meteorological Society*, 87(2), 175-190. <https://doi.org/10.1175/BAMS-87-2-175>
- Compo, G. P., Whitaker, J. S., Sardeshmukh, P. D., Matsui, N., Allan, R. J., Yin, X., et al. (2011). The Twentieth Century Reanalysis Project. *Quarterly Journal of the Royal Meteorological Society*, 137(654), 1-28. <https://doi.org/10.1002/qj.776>
- Whitaker, J. S., Compo, G. P., Wei, X., & Hamill, T. M. (2004). Reanalysis before radiosondes using ensemble data assimilation. *Bulletin of the American Meteorological Society*, 2983-2991. [https://doi.org/10.1175/1520-0493\(2004\)132<1190:RWRUED>2.0.CO;2](https://doi.org/10.1175/1520-0493(2004)132<1190:RWRUED>2.0.CO;2)

Data for the “Hurricane Data” section was obtained from

- Landsea, C. W., & Franklin, J. L. (2013). Atlantic Hurricane Database Uncertainty and Presentation of a New Database Format. *Monthly Weather Review*, 141, 3576-3592.

Data for the “Tropical Moisture Export Data” section was obtained from

- Knippertz, P., & Wernli, H. (2010). A lagrangian climatology of tropical moisture exports to the northern hemispheric extratropics. *Journal of Climate*, 23(4), 987-1003. <https://doi.org/10.1175/2009JCLI3333.1>