

Updating Rainfall Intensity Duration Curves in the Northeast for Runoff Prediction

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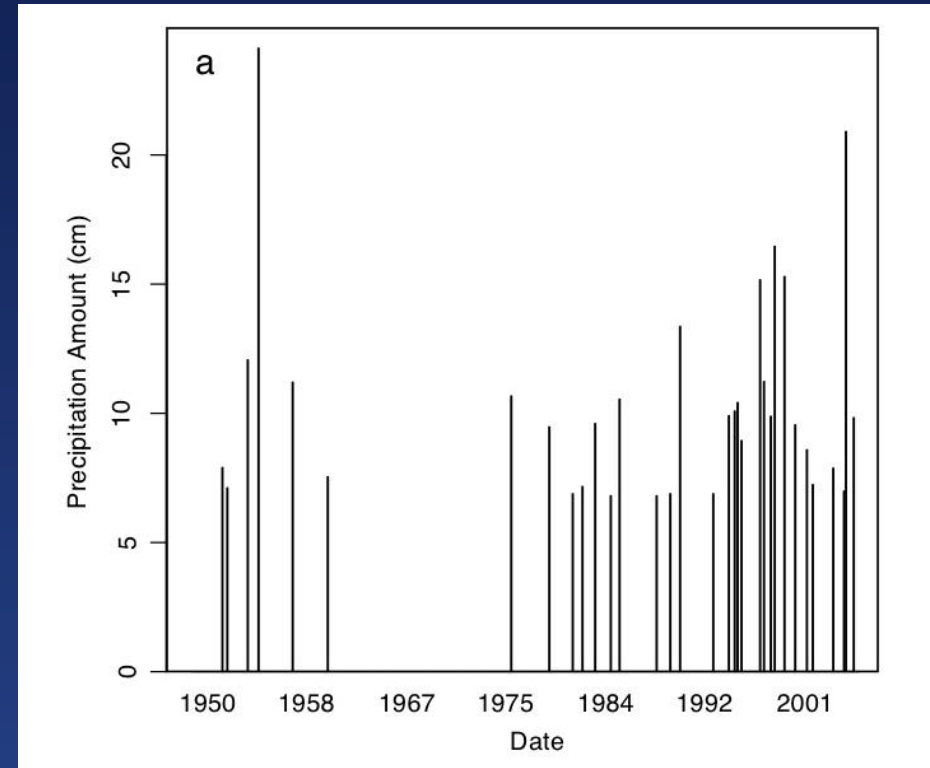
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TP-40?

- NRCS official
- 1940-1962
- Pre-computer
- Simple distribution types
- Changing climate?



NRCS Runoff Calculations

- WinTR-20
- WinTR-55
- EFH2

NRCS Methods

- CAFO 25 year and 100 yr
- Stormwater 1 yr and 100 yr
- Erosion and Sediment control 2 yr
- Dam Safety 100 yr
- Conservation practices 10 yr and 25 yr

Extreme Precip in a Changing Climate

Example:

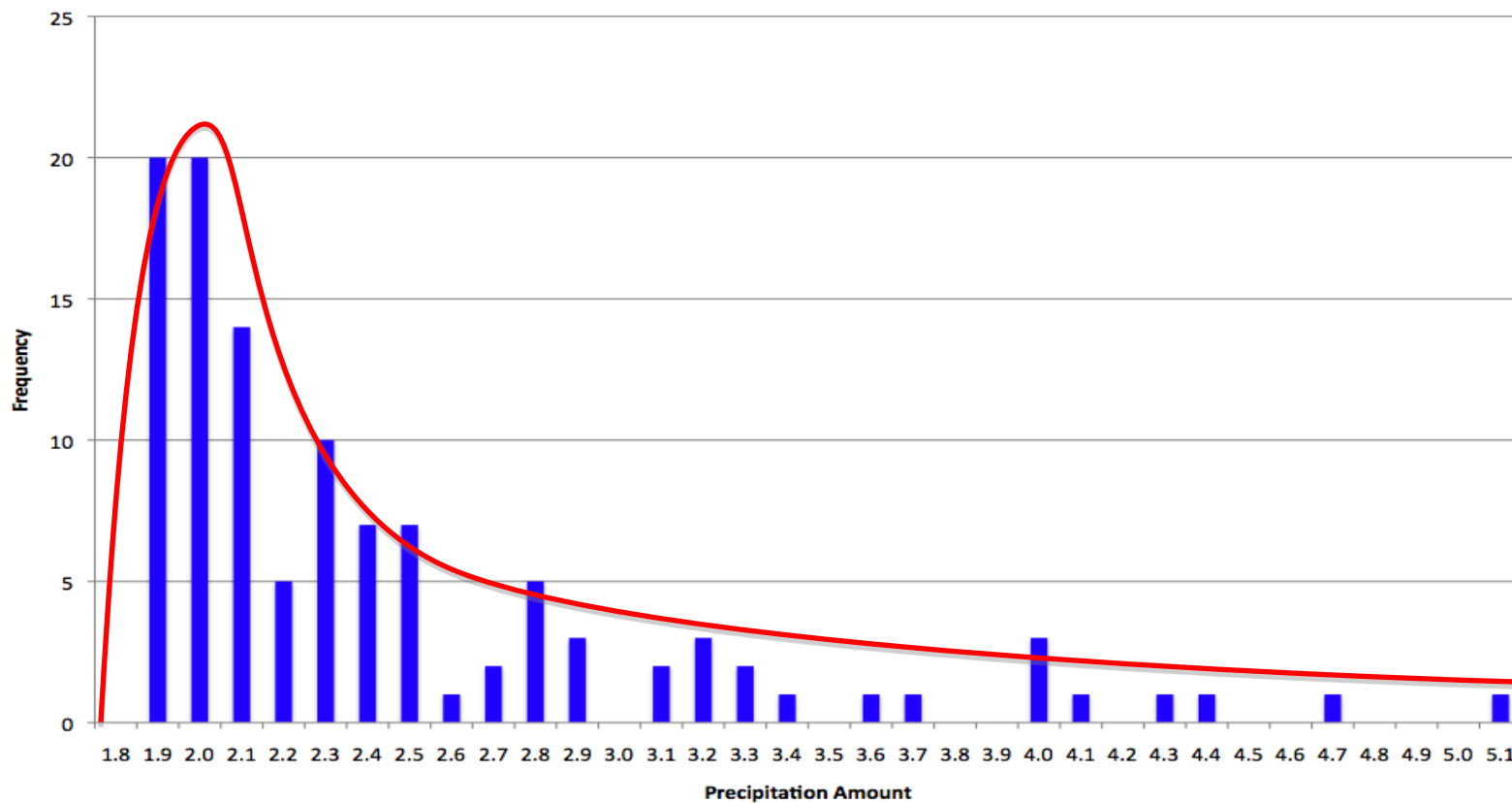
- Reagan
Airport, DC
- 1 day duration
- Beta-P
distribution

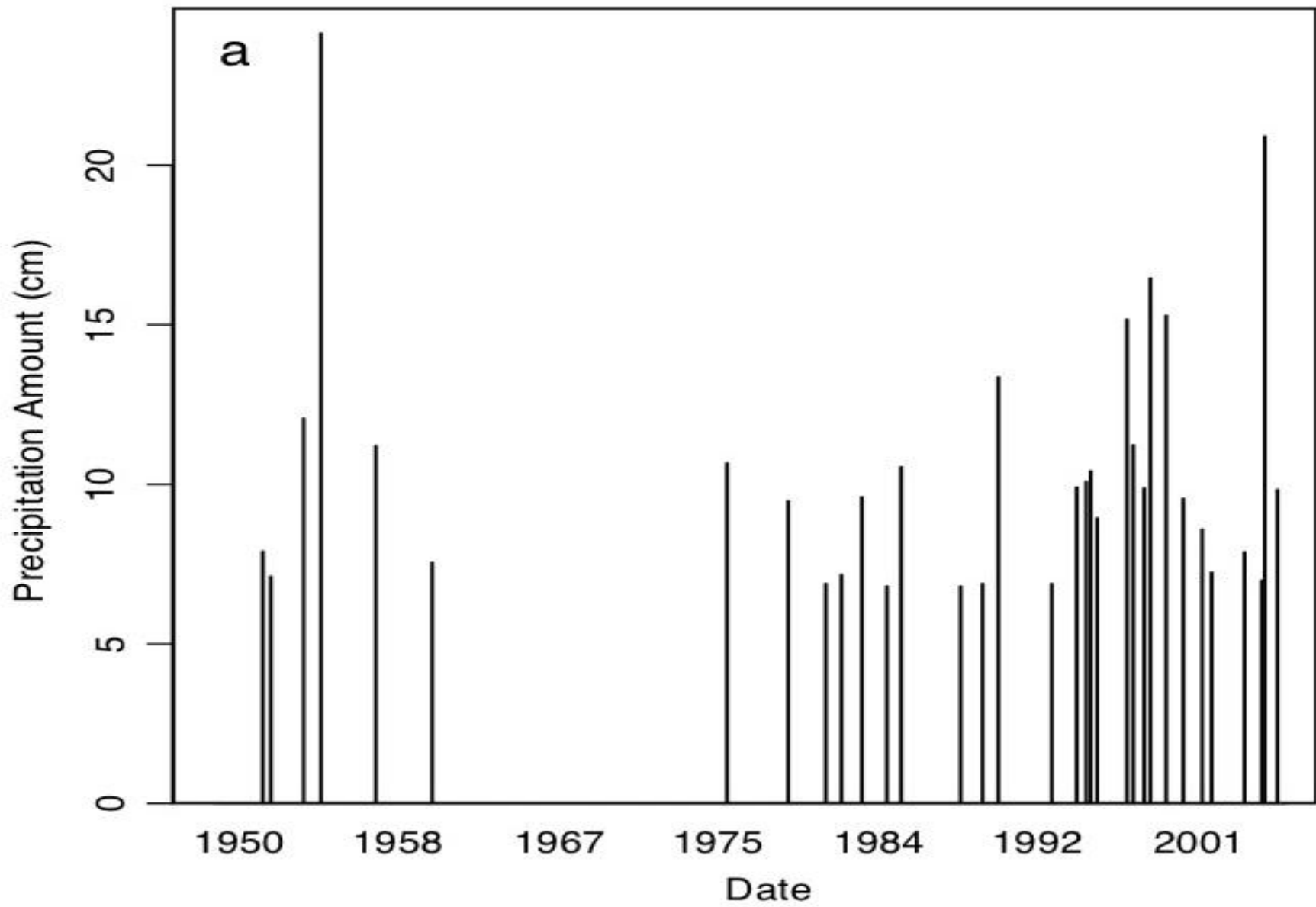
	NWS Data (... - 2000)	NRCC Data (... - 2008)
1-yr	2.46"	2.58"
2-yr	2.65"	2.78"
5-yr	3.53"	3.76"
10-yr	4.39"	4.73"
25-yr	5.85"	6.39"
50-yr	7.28"	8.03"
100- yr	9.05"	10.09"
200- yr	11.25"	12.68"
500- yr	15.00"	17.15"

Project Timeline

- Jan 2009** Project start
- Apr 2009** Sub-daily analysis, Hourly analysis, Comparison between NRCC results and Atlas14
- Jul 2009** Daily analysis, Multi-daily analysis, Gridding and smoothing processes, Develop isohyetal maps
- Oct 2009** Compute confidence intervals, Intensity frequency duration curves, Site-specific distribution curves, Atlas14-like data files
- Jan 2010** Beta version of web site to allow for user feedback and testing
- Apr 2010** Software for real-time monitoring, Modifications from beta testing
- Aug 2010** Finalize web site, Technical documentation and users guide
- Oct 2010** Beta version of real-time monitoring web site, Complete documentation
- Nov 2010** Outreach: seven one day sessions, one on line session (Dec), and one technical session (Jan.)
- Jan 2011** Finalize real-time monitoring site

1day Partial Duration Series for Ithaca, New York (1893-2008)



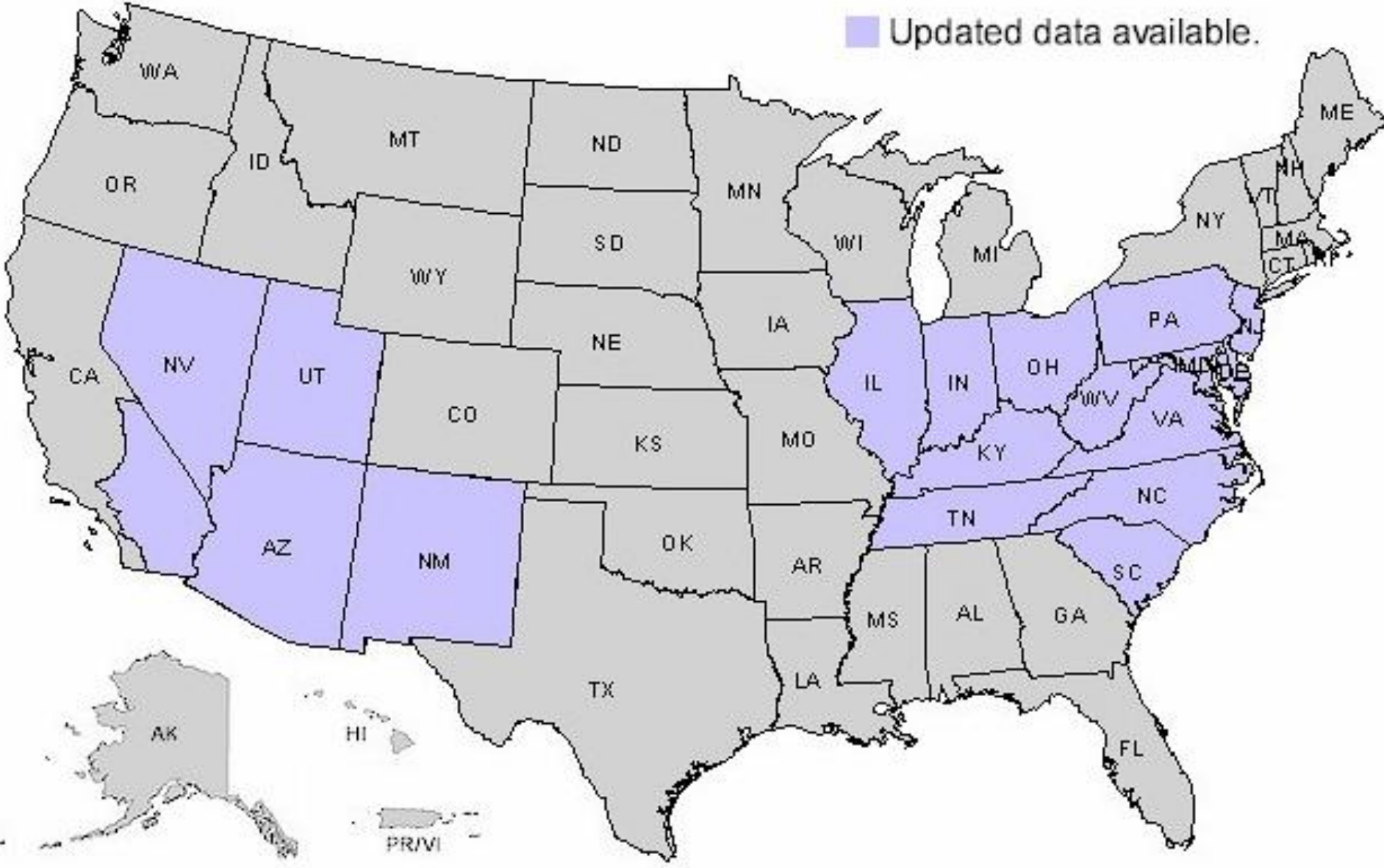


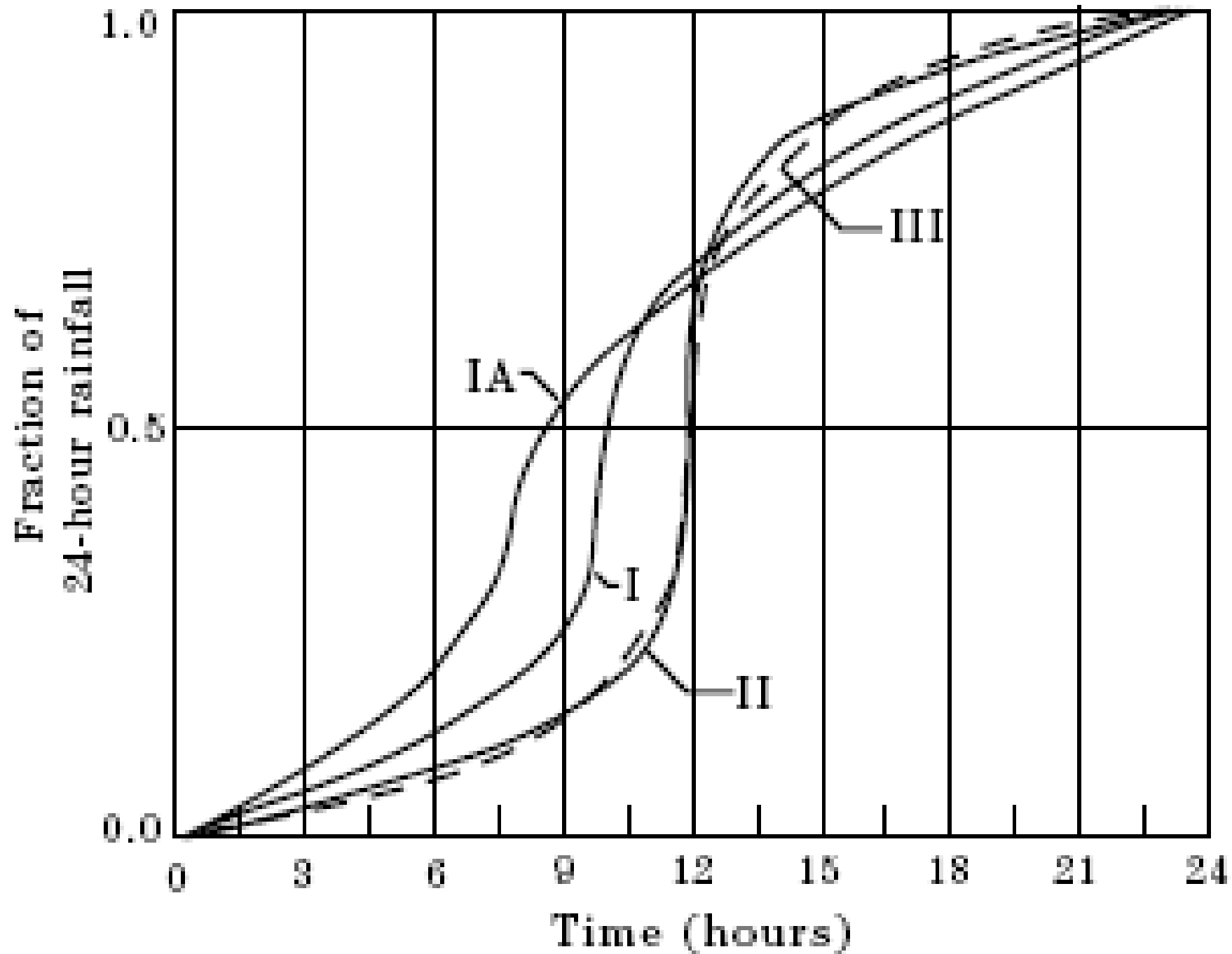
NOAA Atlas 14 web site

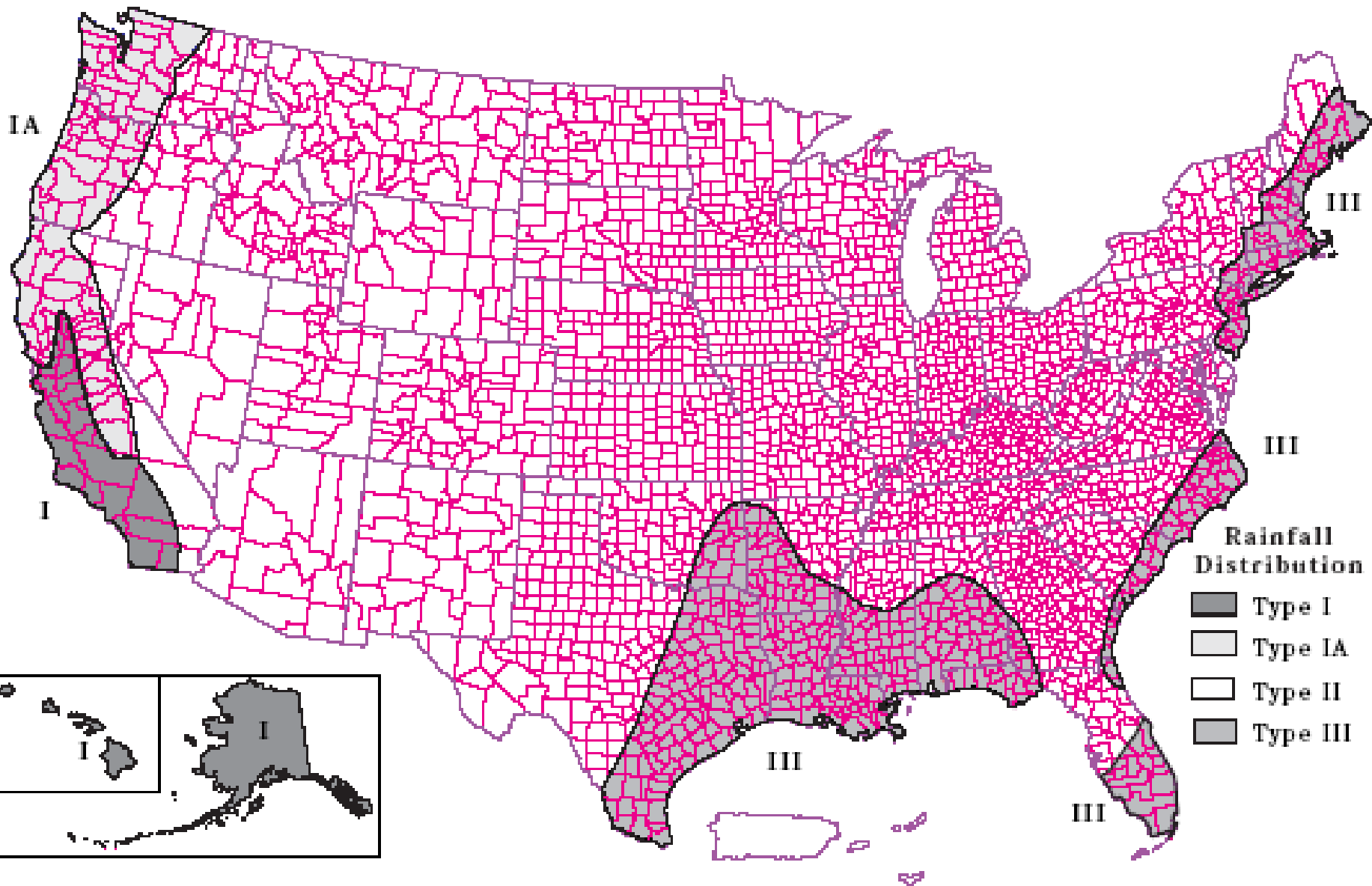
Download rainfall frequency data at:

<http://www.nws.noaa.gov/ohd/hdsc/>

Updated data available.

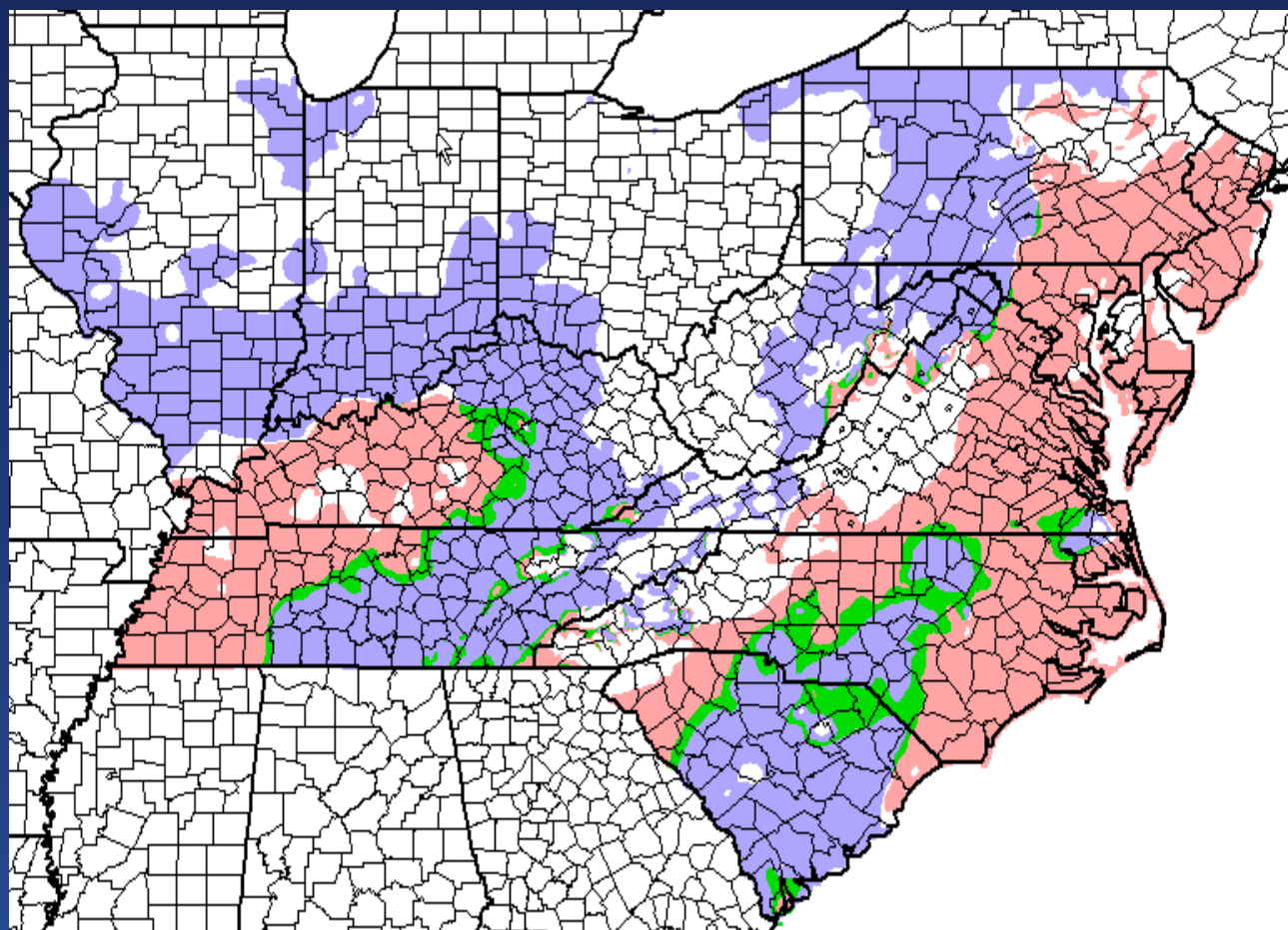






Where Type II and Type III compare with NOAA-derived distribution

- Purple: Type II
- Pink: Type III
- Green: both



Northeast Regional Climate Center web site:

Extreme Precipitation in a Changing Climate - Windows Internet Explorer

File Edit View Favorites Tools Help

http://sunspot.eas.cornell.edu/~daz8/xprecip/new3/

Extreme Precipitation in New York & New England
An Interactive Web Tool for Extreme Precipitation Analysis

About this Project **Data & Products** **Documentation**

The climatology of very large precipitation events is a critical component of engineering design and regulations for structures and facilities that must withstand or protect against such events. These events can produce localized urban and widespread flooding with damage to property, degradation of water quality, and potential loss of life. On a national level, a comprehensive climatology of rainfall events has not been updated since the early 1960s

Past Extreme Rainfall Analyses

In New York and New England this is a concern as the current climatology excludes almost 50 additional years of data. The National Weather Service is using a regional approach to update the 1960s analysis with to climatologies completed for the southwestern and middle Atlantic regions of the U.S. The Mid-Atlantic analysis extends as far north as Pennsylvania and thus excludes New York and New England. In these states, several regional and stat-specific extreme rainfall analysis were conducted in the 1990 and early 2000s, but even these analysis are over a decade old and given differences in the data records used do not provide a consistent regional analysis of rainfall extremes.

Extreme Rainfall Since the 1960s

The previous climatologies have been based on the premise that the

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Web Site Features

A number of features are included in this website to make it compatible with the NWS analysis for the Middle Atlantic region and to enhance its usability. The design of the site and its products have been reviewed by stakeholders with the U.S. Natural Resource Conservation Service (NRCS), various state agencies and private engineering consulting firms. The site includes estimates of extreme rainfall for various durations (from 5 minutes to 10 days) and recurrence intervals (1 year to 500 years). These data are interpolated to a 30-second grid. Confidence intervals for these values are also included as are the partial duration rainfall series used in their computation. Regional extreme rainfall maps and graphic products are also available. Precipitation distribution curves can be generated for each grid either directly or from the NRCS Win20 software, eliminating the need to use a static Type II or Type III curve.

Internet 100%

Questions?

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