

NOAA
FISHERIES
Gloucester, MA

Northeast U.S. extreme precipitation: webinar series overview

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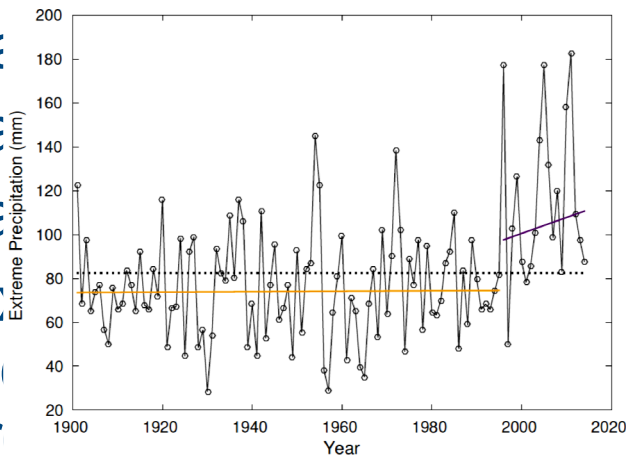
Extreme precipitation webinar series

- Sep 10: regional extreme precip climatology and trends
(Laurie Agel and Jonathan Winter)
- Sep 19: Projections of precipitation data
(Matt Barlow and Art Degaetano)
- Oct 3: Distinguishing extreme precipitation and flooding
(Glenn Hodgkins and David Vallee)

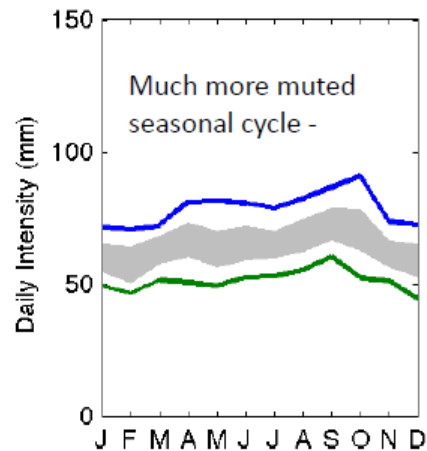
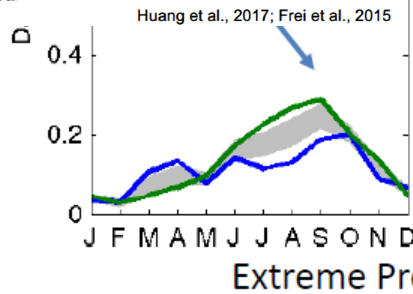
Recorded webinars available at: <http://www.nrcc.cornell.edu/services/precip/precip.html>

Extreme precip climatology and trends

- Extreme precip ca
 - frequency peak
 - frequency peak
- Most Northeast e. storm tracks and (belts) can differ fr
- Extreme precip (defined as amo has increased by 53% since 199
- Primary trend driver is tropical c, SSTs and enhanced water vapo



➤ Northeast, but:
all for coastal areas
➤ as



Agel et al. 2015

Extreme precip projections

- Extreme precip very likely to be more intense and more frequent
- Understanding and projecting future extreme precipitation events requires improved climate models
- Estimating the probability of extreme precipitation events requires improved climate models
- Current climate models underestimate the frequency of the heaviest rainfall events by a factor of 2 to 10, making the old 100-year flood now a 20 to 100-year event

More of this: Oct 2016, Worcester



Photo: WBZ

Distinguishing extreme precip and flooding

- Northeast flood peak increases over last 50 years generally less than heavy precip increases (minimally impacted basins), likely because flood peaks are influenced by storm-event precip AND antecedent basin moisture, snowpack, and other factors
- Urbanization and reservoir regulation
- Increased flood frequency across in small watersheds and basins to land use change
- Increased annual precipitation (at corridor/coastal plain) and frequent events ≥ 1 " in 24-hours)

Magnitude of peak-flow trends
1966-2015, minimally altered basins



Blue triangles, increases
Brown triangles, decreases

Open symbols, < 25%
Light solid, increases 25-50%
Medium solid, 50-75%
Dark solid, > 75%

Hodgkins et al., 2019

Break out group discussions

- A webinar (two talks) for each table
- Discuss and record these things:
 - *key points you identified*
 - *key questions you still have*
 - *further science you would like on the topic*