

# Extreme Precipitation: Historical & Future Trends

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Northeast Regional  
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# Extreme Precipitation Events



Vermont 1998



New York 2006



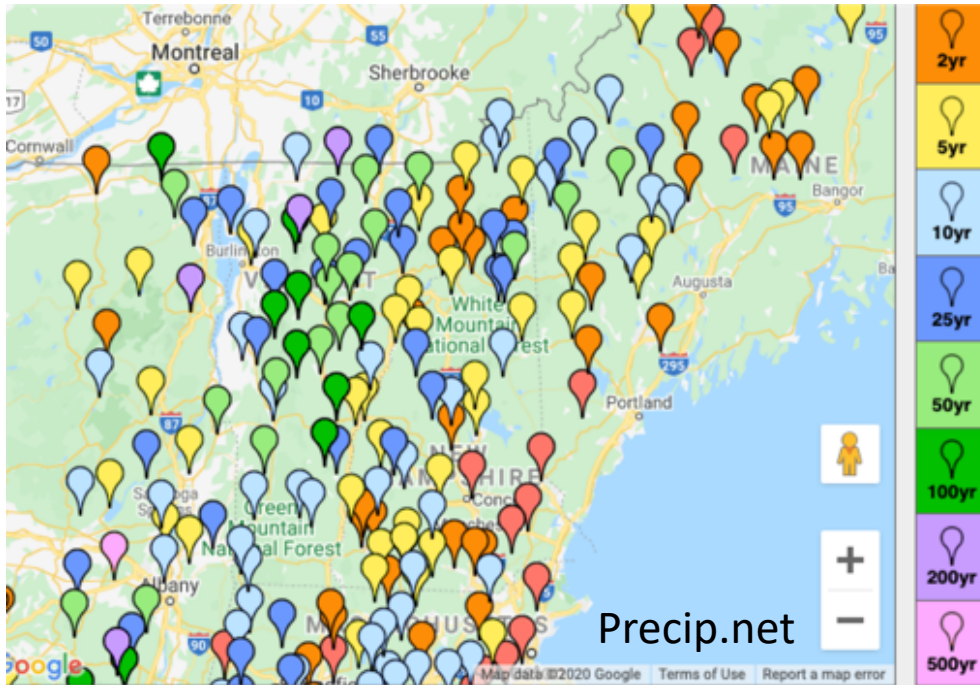
New England 2010



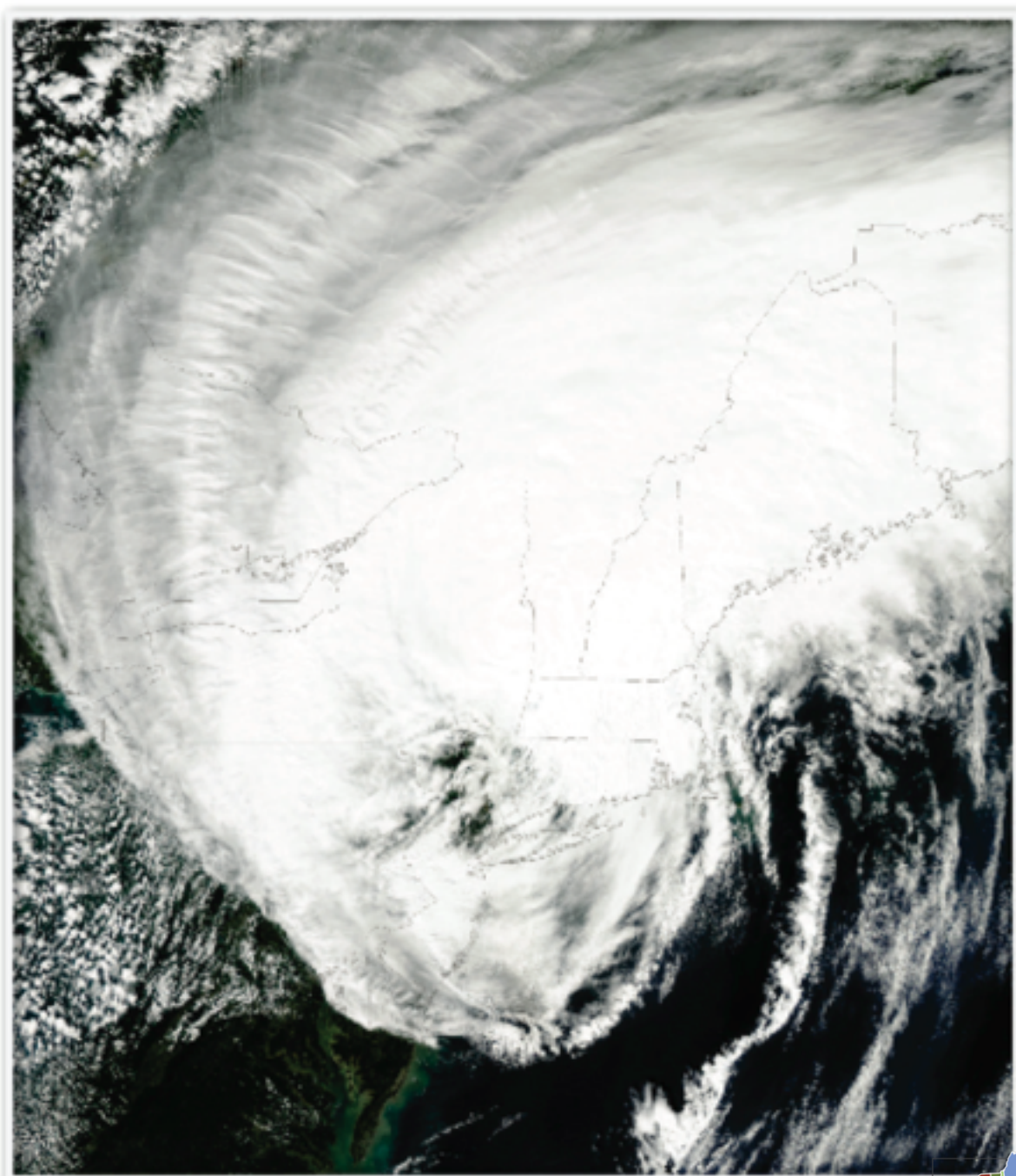
# Irene

## 8/28-29/2011

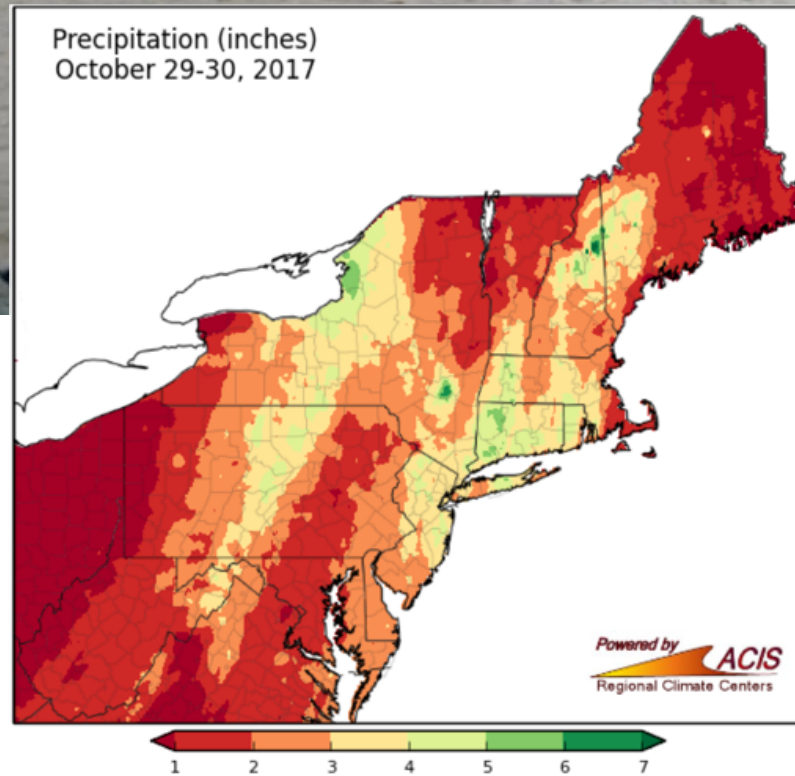
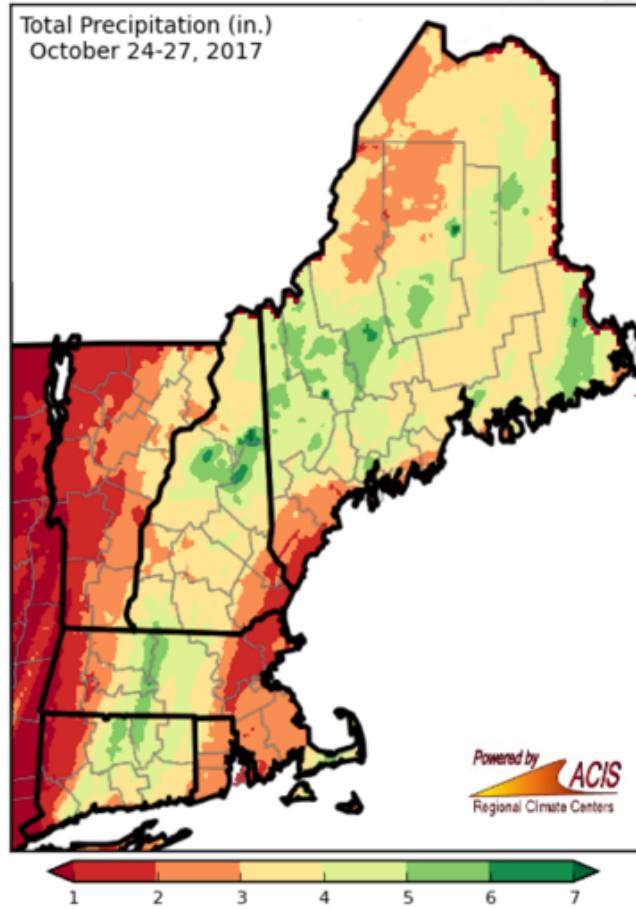
2-Day storm events on 8/28-29/2011



Cavendish, VT: 7.60" = 100 yr storm event  
Gorham, NH: 6.71" = 50 yr storm event  
Andover, ME: 6.22" = 50 yr storm event



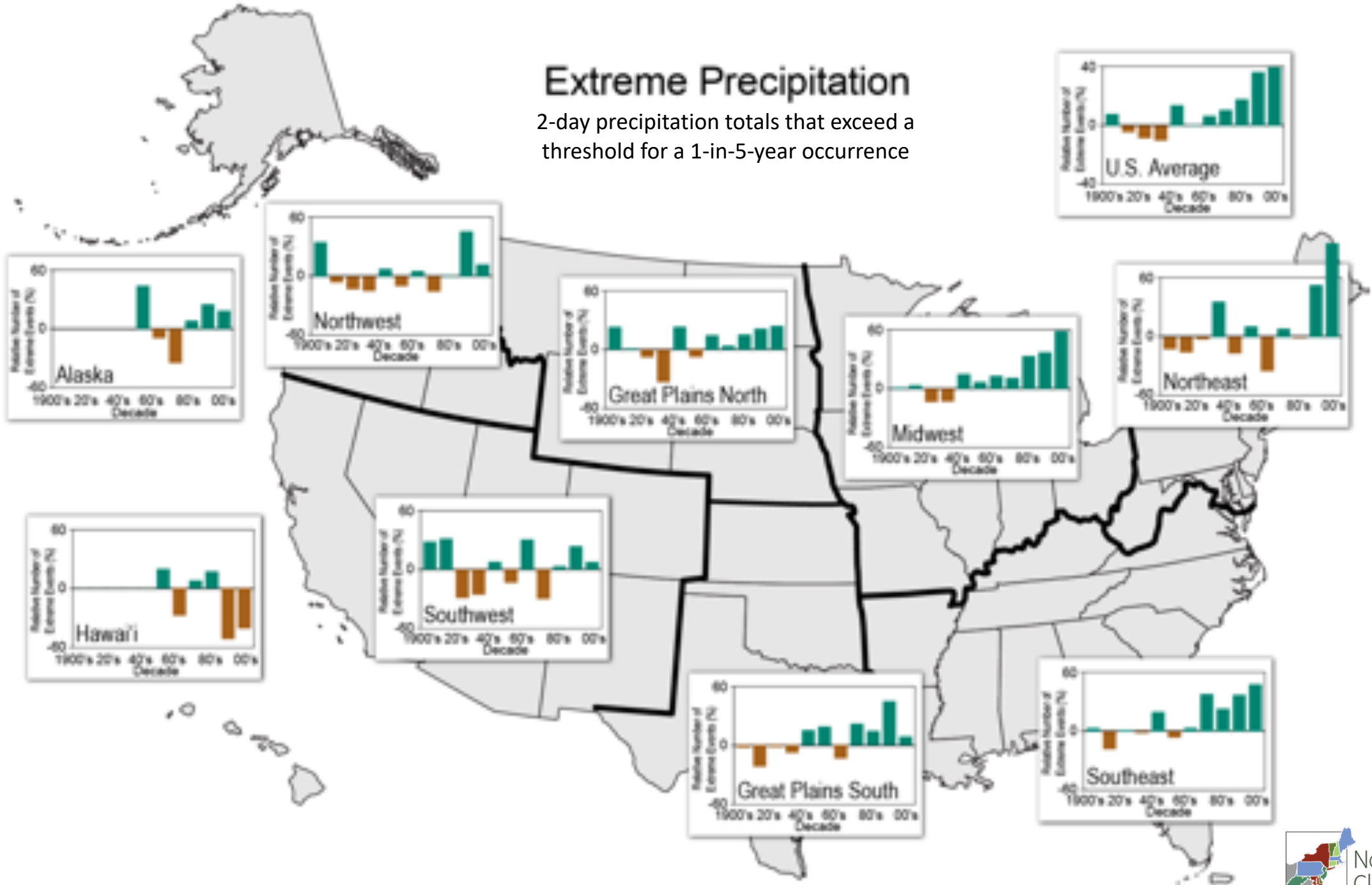
# Heavy Rainfall & Flooding – NH 2017





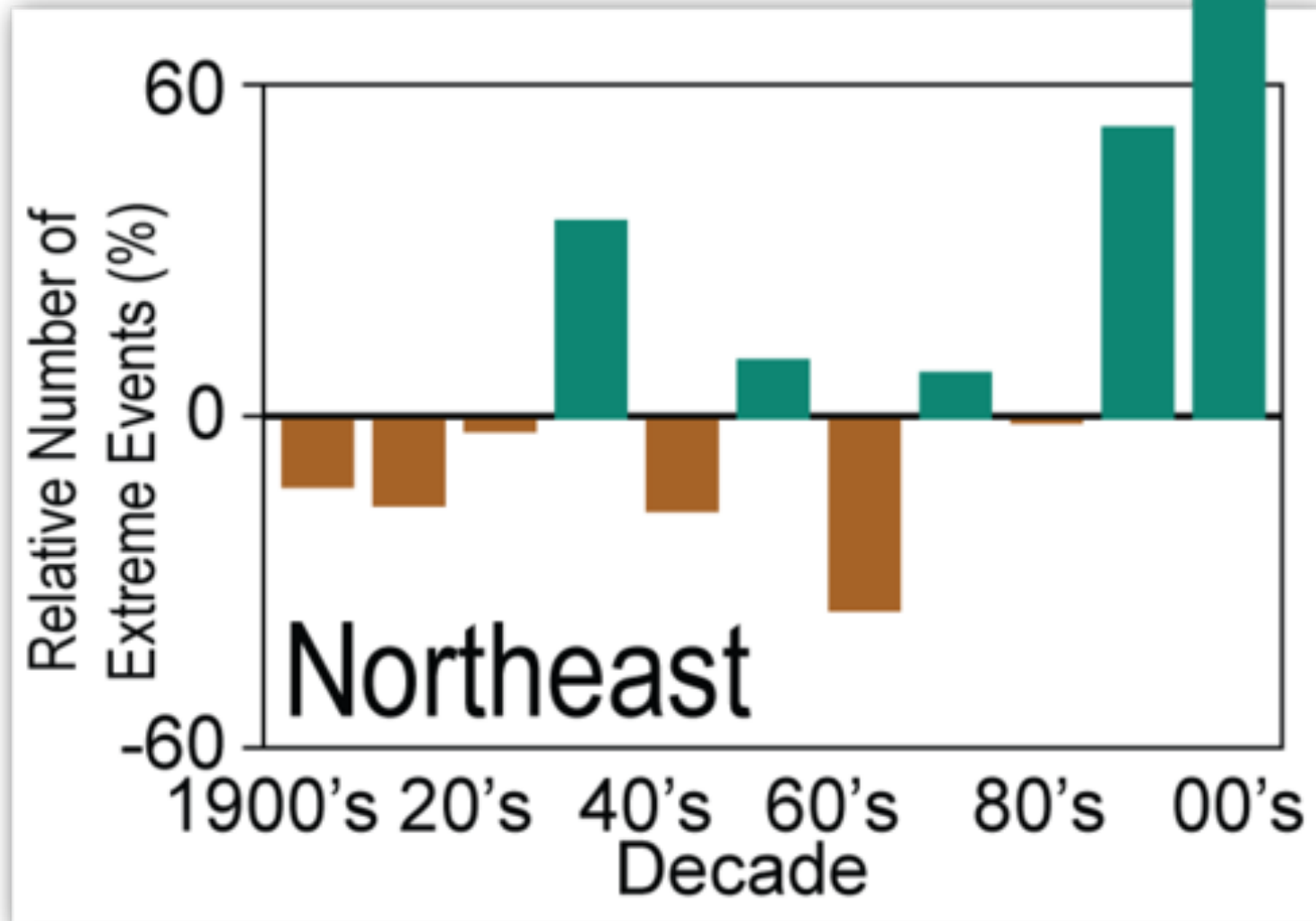
# Extreme Precipitation

2-day precipitation totals that exceed a threshold for a 1-in-5-year occurrence



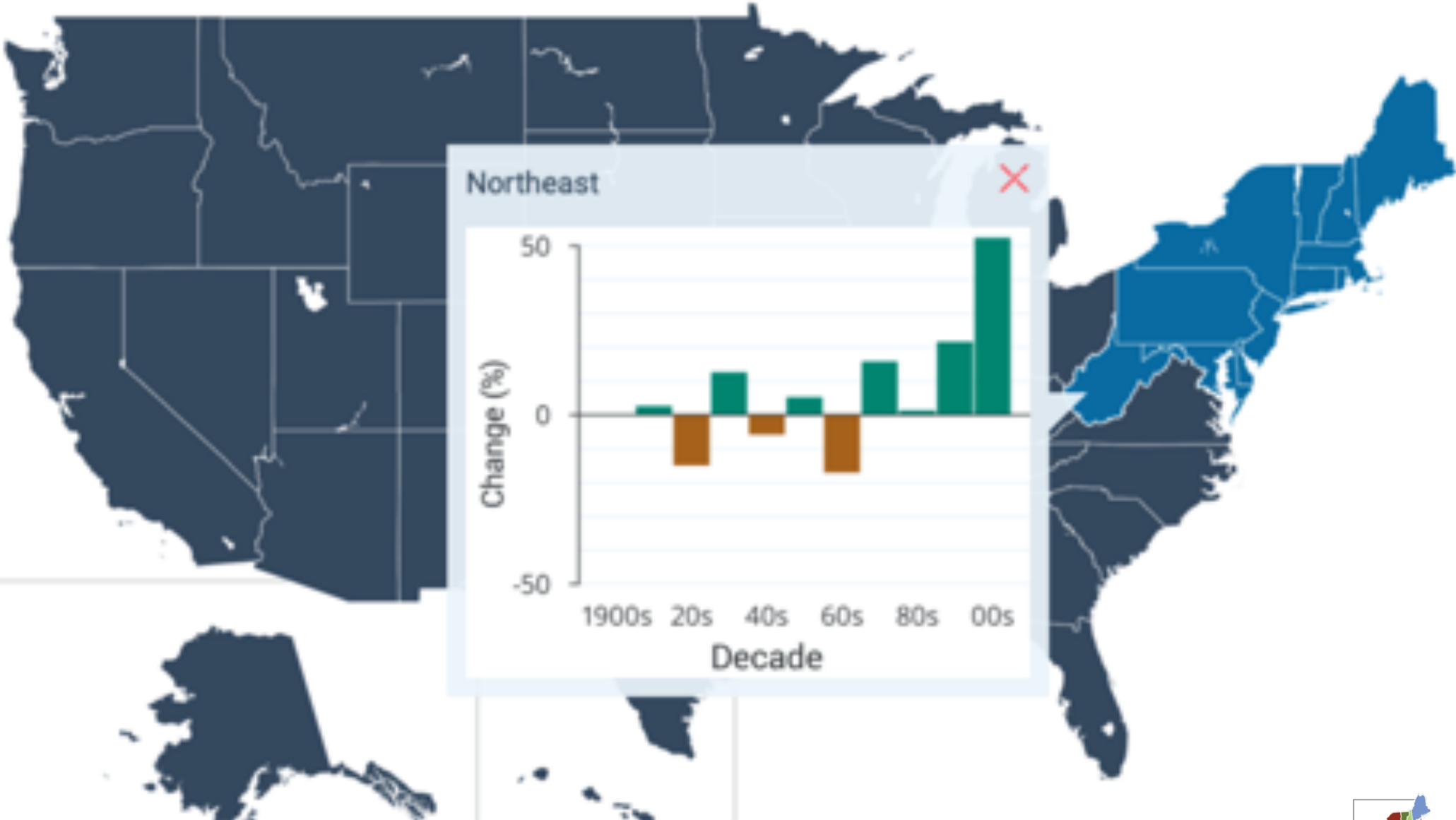
# Extreme Precipitation

2-day precipitation totals that exceed a threshold for a 1-in-5-year occurrence

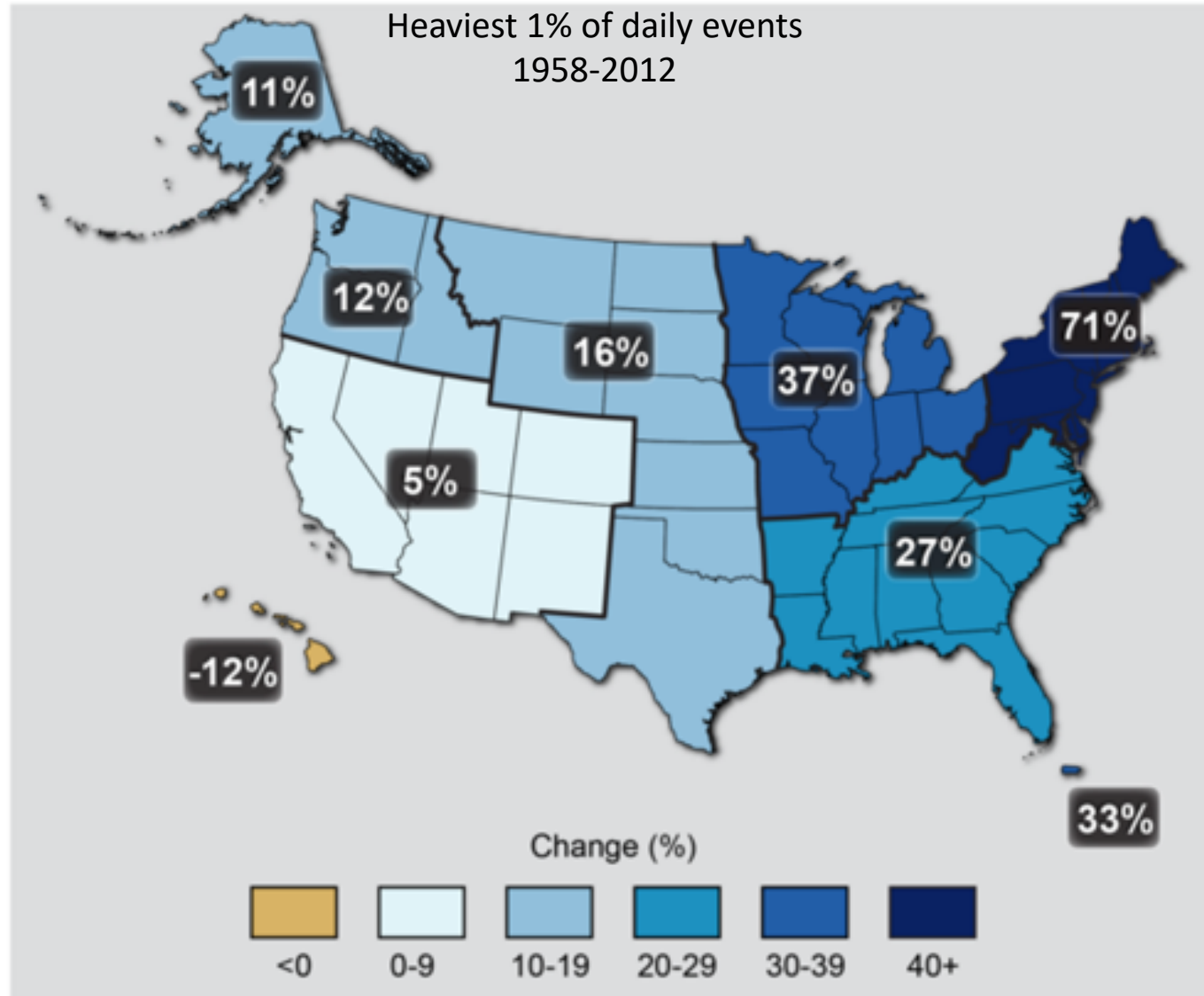


# Heavy Downpours Increasing

Heaviest 1% of daily events



# Observed Change in Very Heavy Precipitation







Projections?

# Projected Change in Heavy Precipitation Events

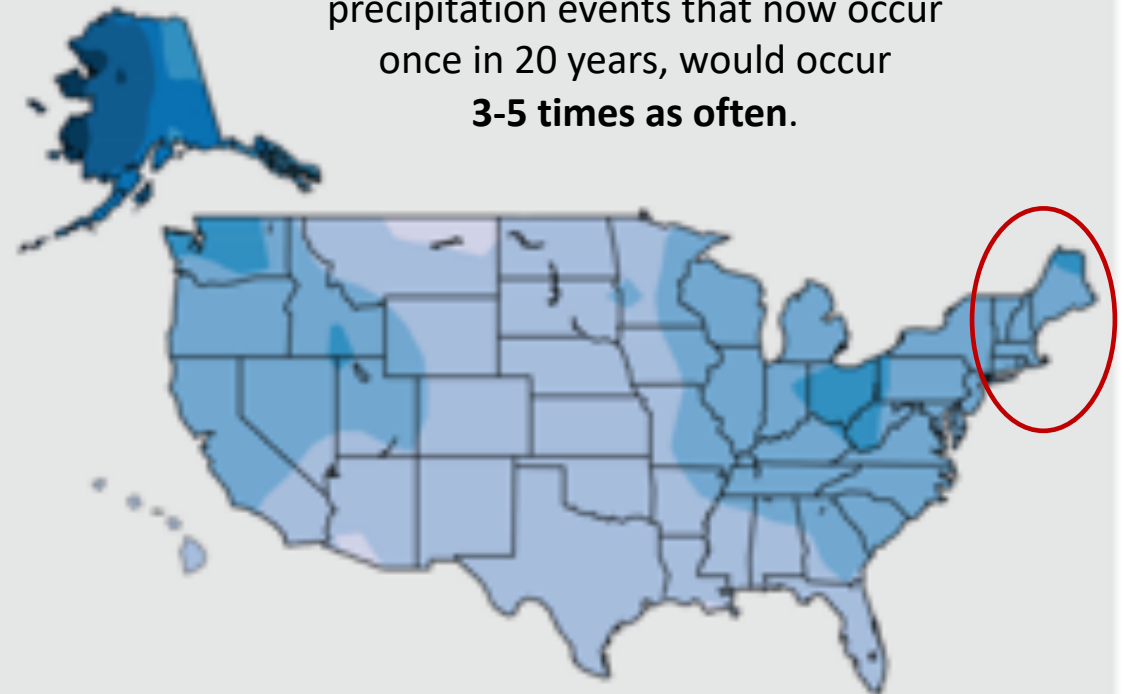
## Rapid Emissions Reductions (RCP 2.6)

By late century (2081-2100) daily precipitation events that now occur once in 20 years, would occur **nearly twice as often.**



## Continued Emissions Increases (RCP 8.5)

By late century (2081-2100) daily precipitation events that now occur once in 20 years, would occur **3-5 times as often.**



Future Change Multiplier



# Annual Maximum Precipitation

Precipitation falling on the wettest day of the year.

Rapid Emissions Reductions (RCP 2.6)

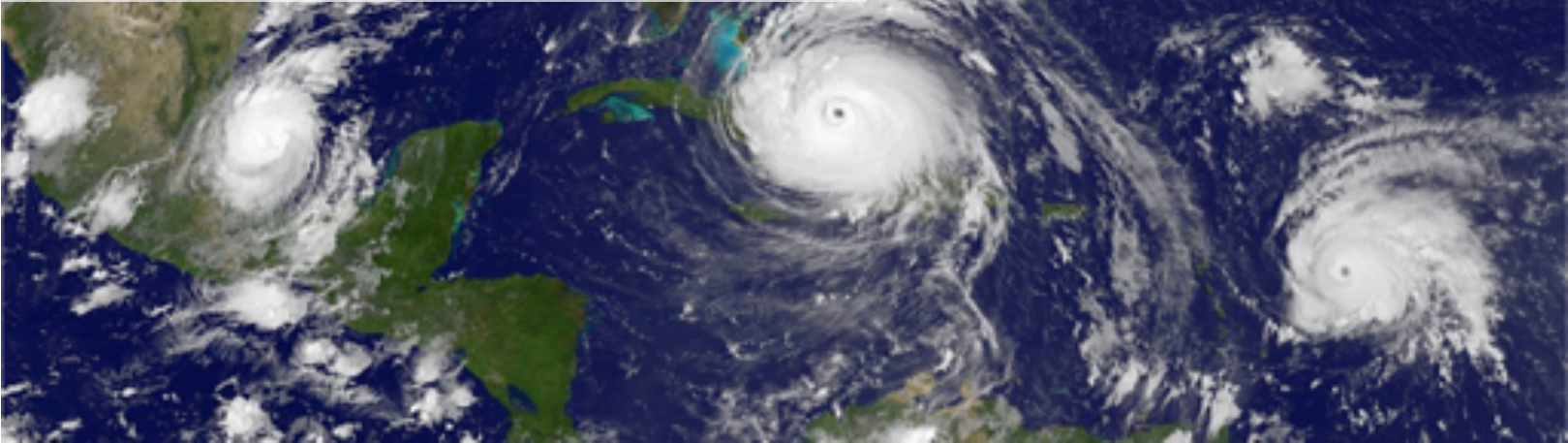
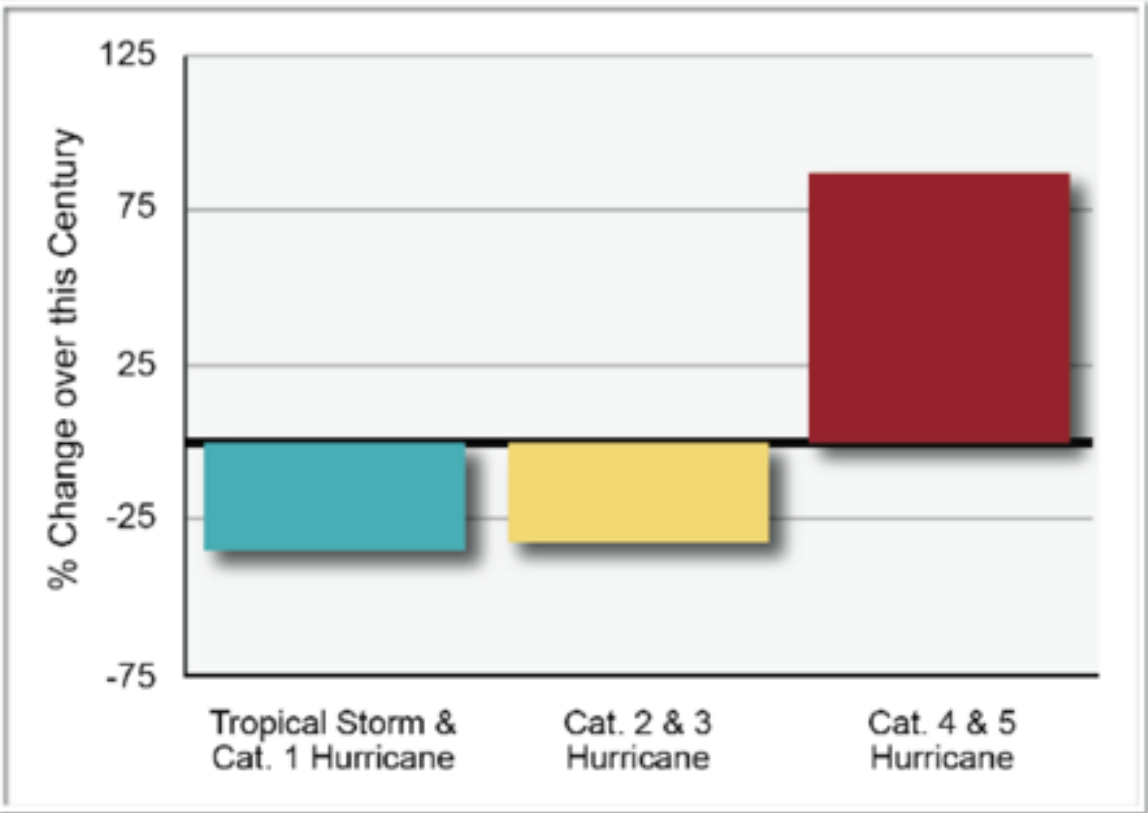
Continued Emissions Increases (RCP 8.5)



Change (%)

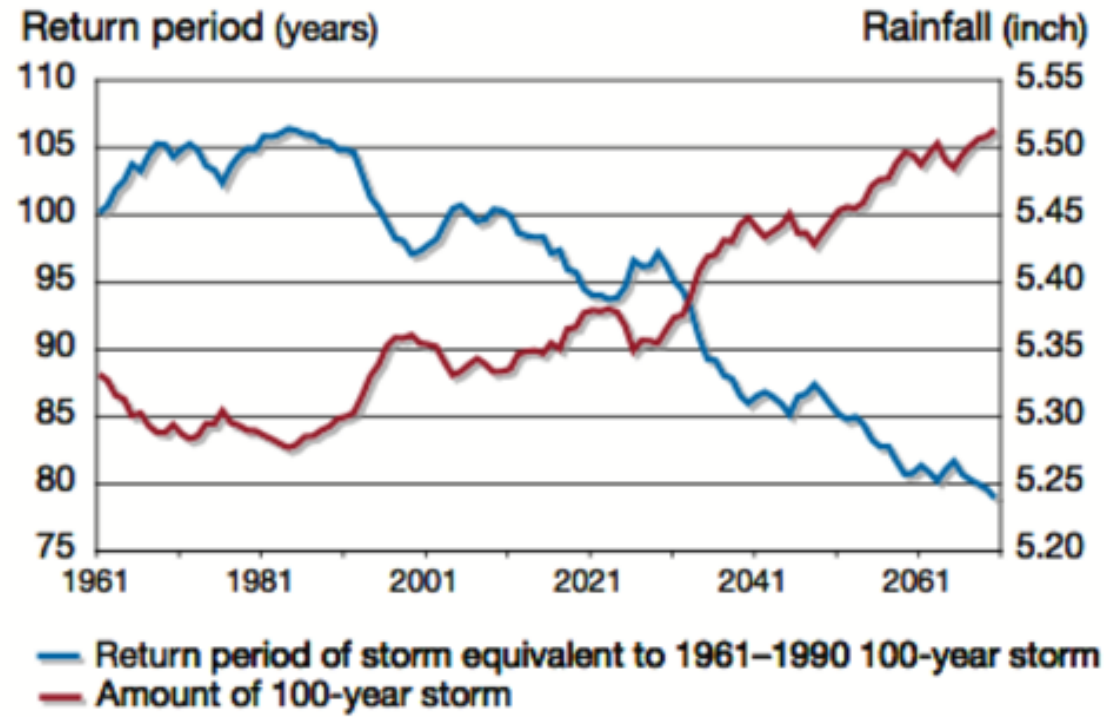


# Projected Changes in Atlantic Hurricane Frequency by Category





# Projected Rainfall & Frequency of 100-year storm





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Thank you!  
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