

# Useful Climate Forecasts: How Far (Out) Can We Go?

John Nielsen-Gammon

*Texas A&M University*

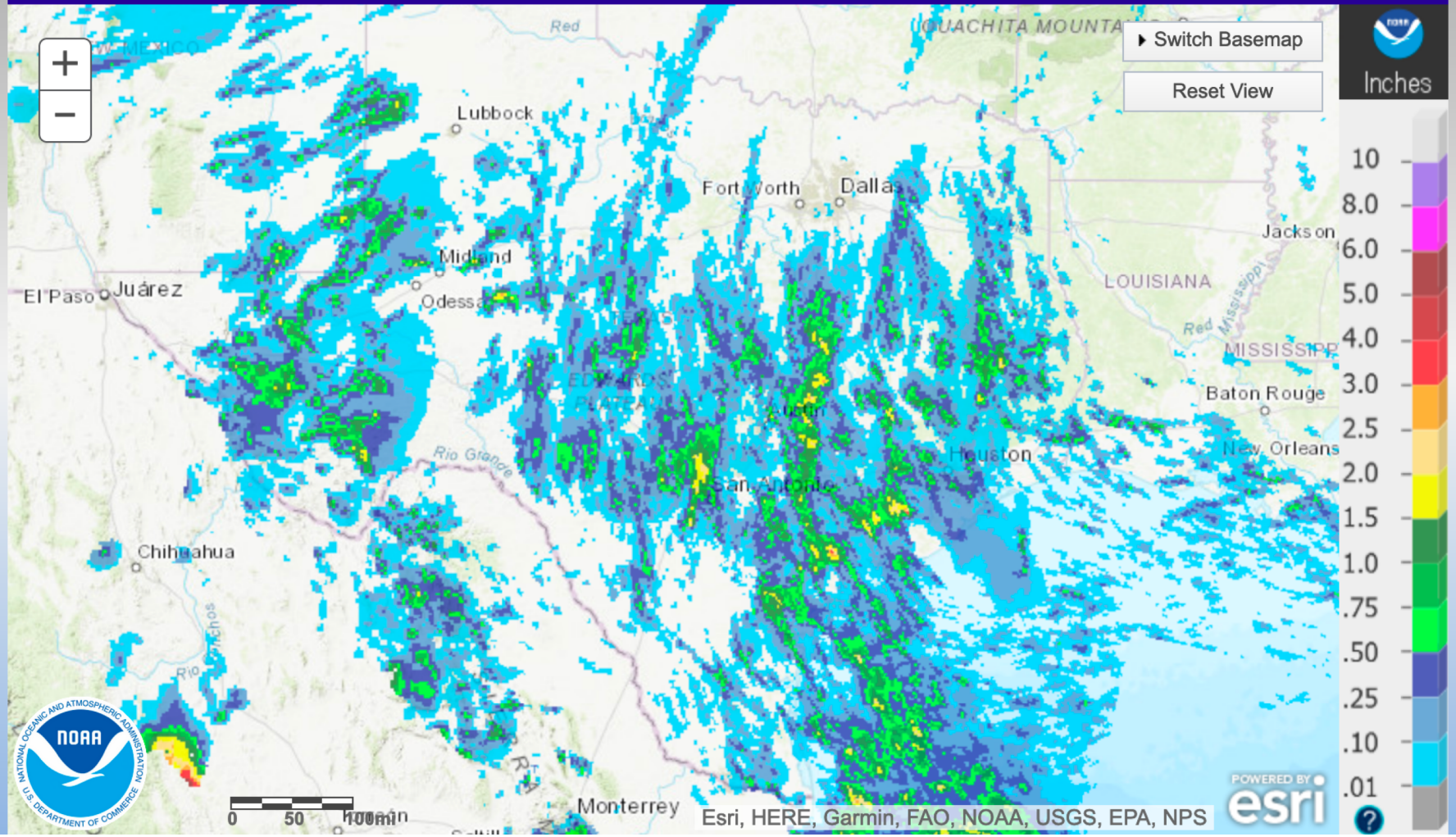
*Texas State Climatologist*

Displaying Current 1-Day Observed Precipitation  
Valid on: September 12, 2019 12:00 UTC

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What is UTC time? Map Help

Find address or location

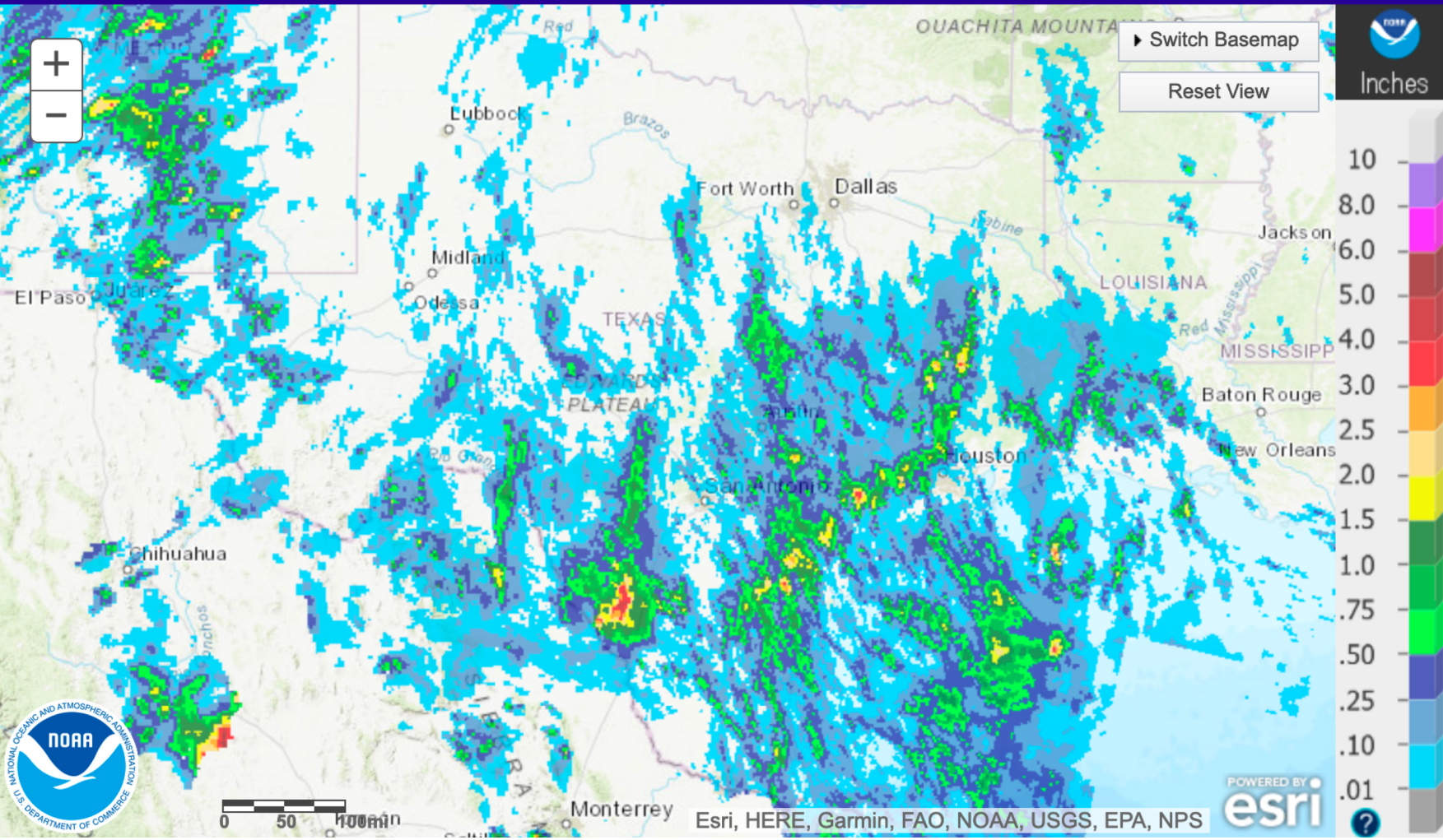


Displaying Yesterday's 1-Day Observed Precipitation  
Valid on: September 11, 2019 12:00 UTC

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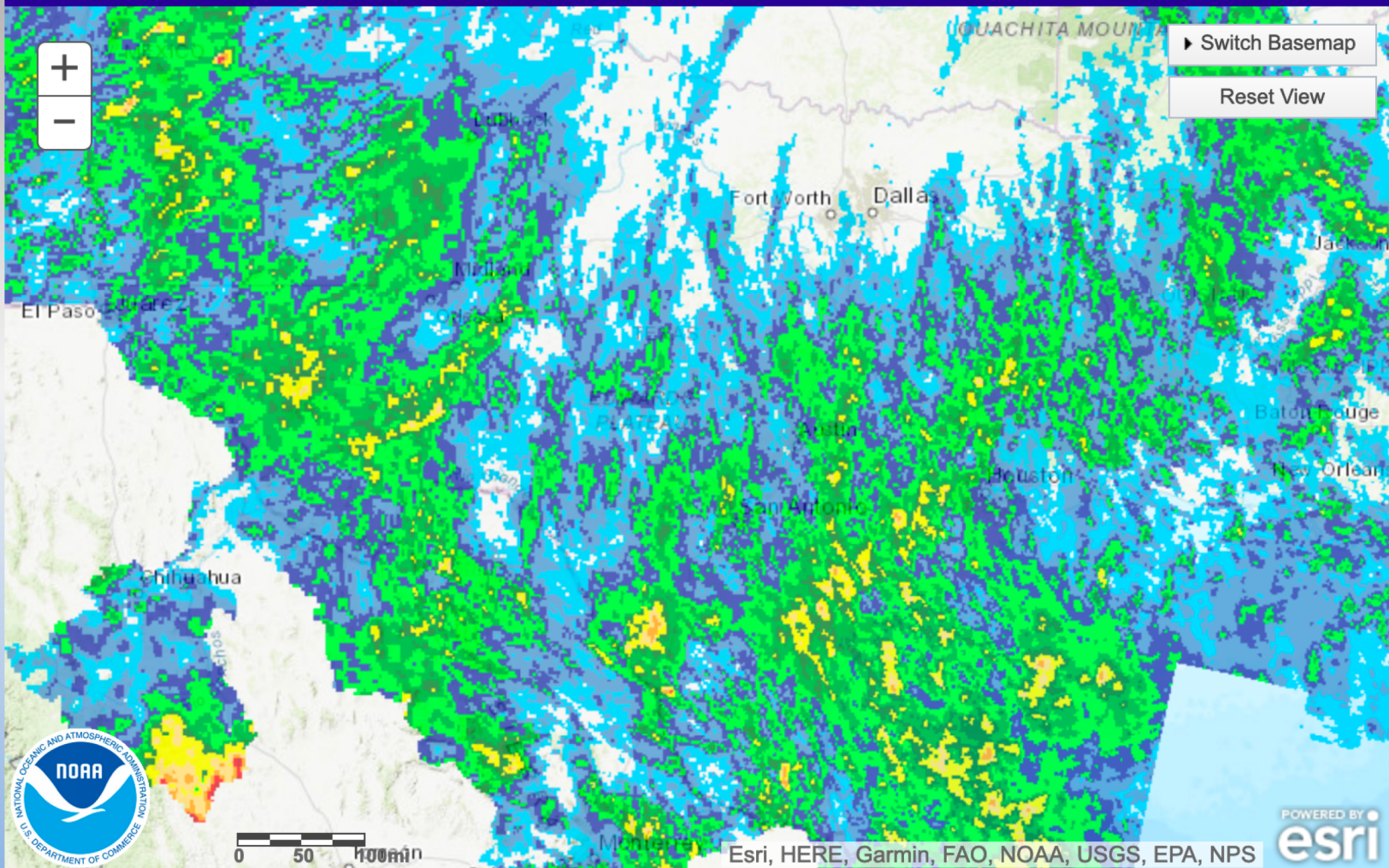
Displaying Last 7-Day Observed Precipitation  
Valid on: September 12, 2019 12:00 UTC

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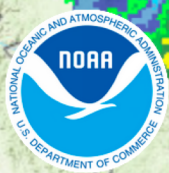
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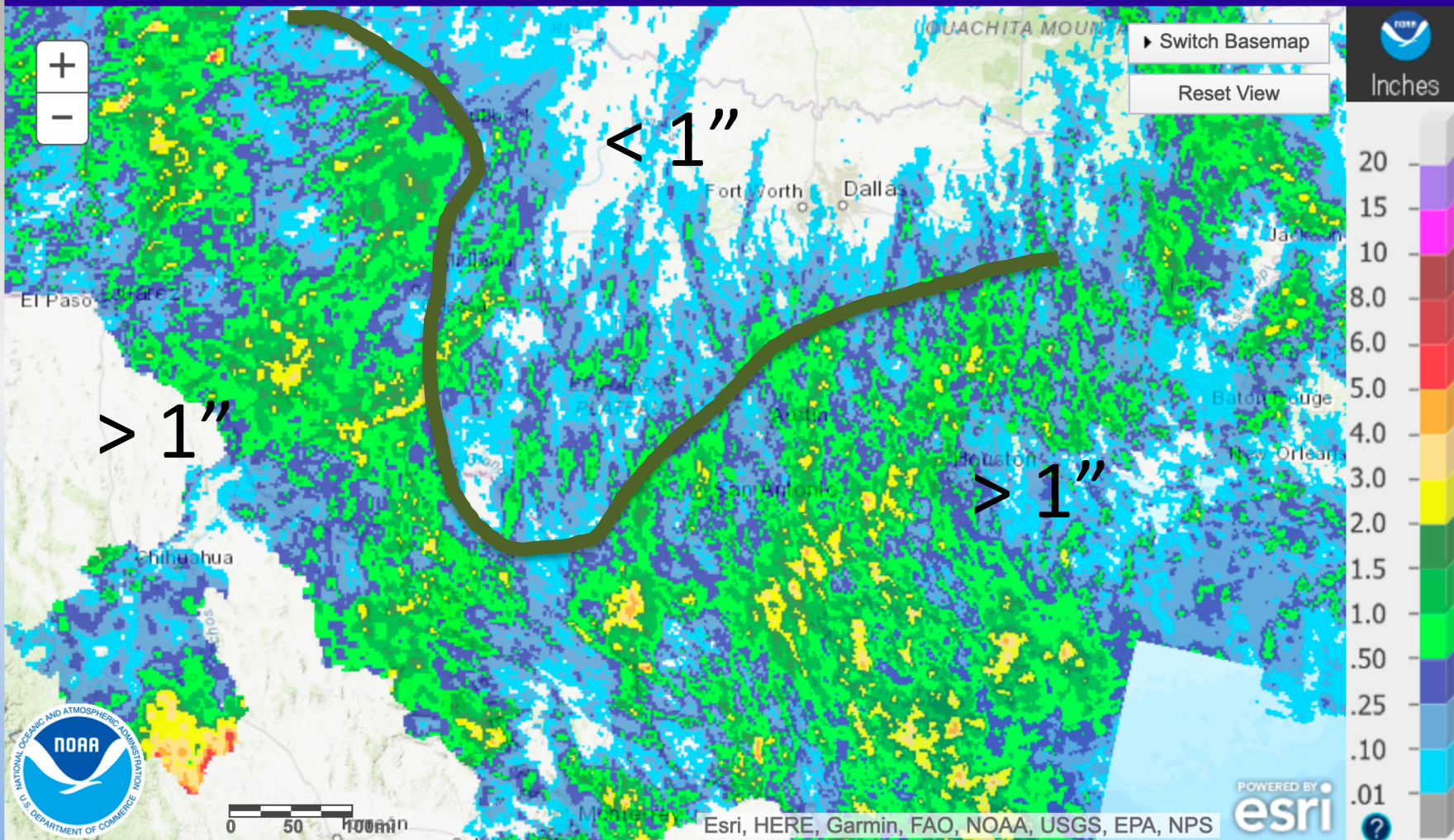


Displaying Last 7-Day Observed Precipitation  
Valid on: September 12, 2019 12:00 UTC

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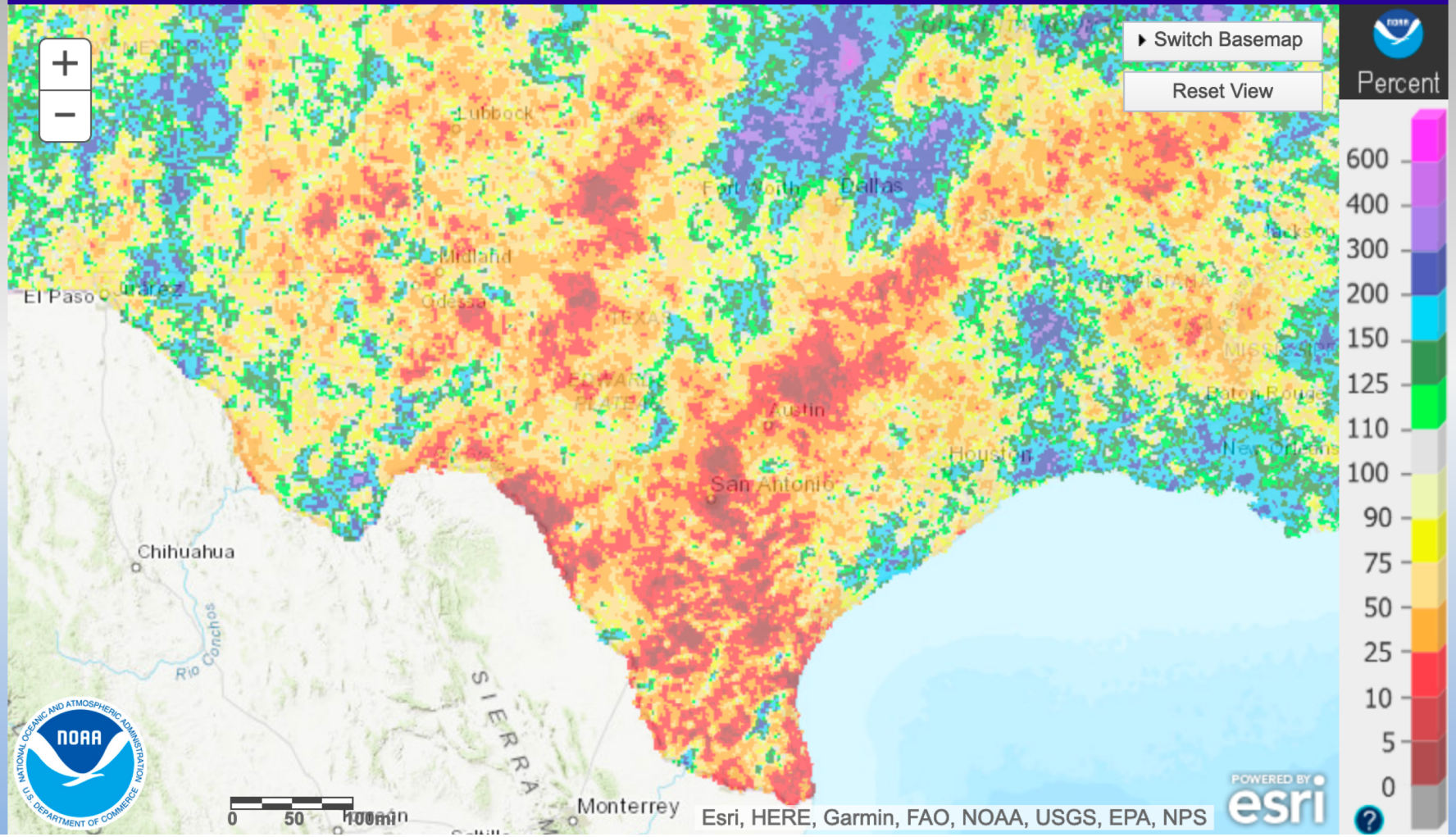


Displaying August, 2019 Monthly Percent of Normal Precipitation  
Valid on: September 01, 2019 12:00 UTC

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Displaying August, 2019 Monthly Percent of Normal Precipitation  
Valid on: September 01, 2019 12:00 UTC

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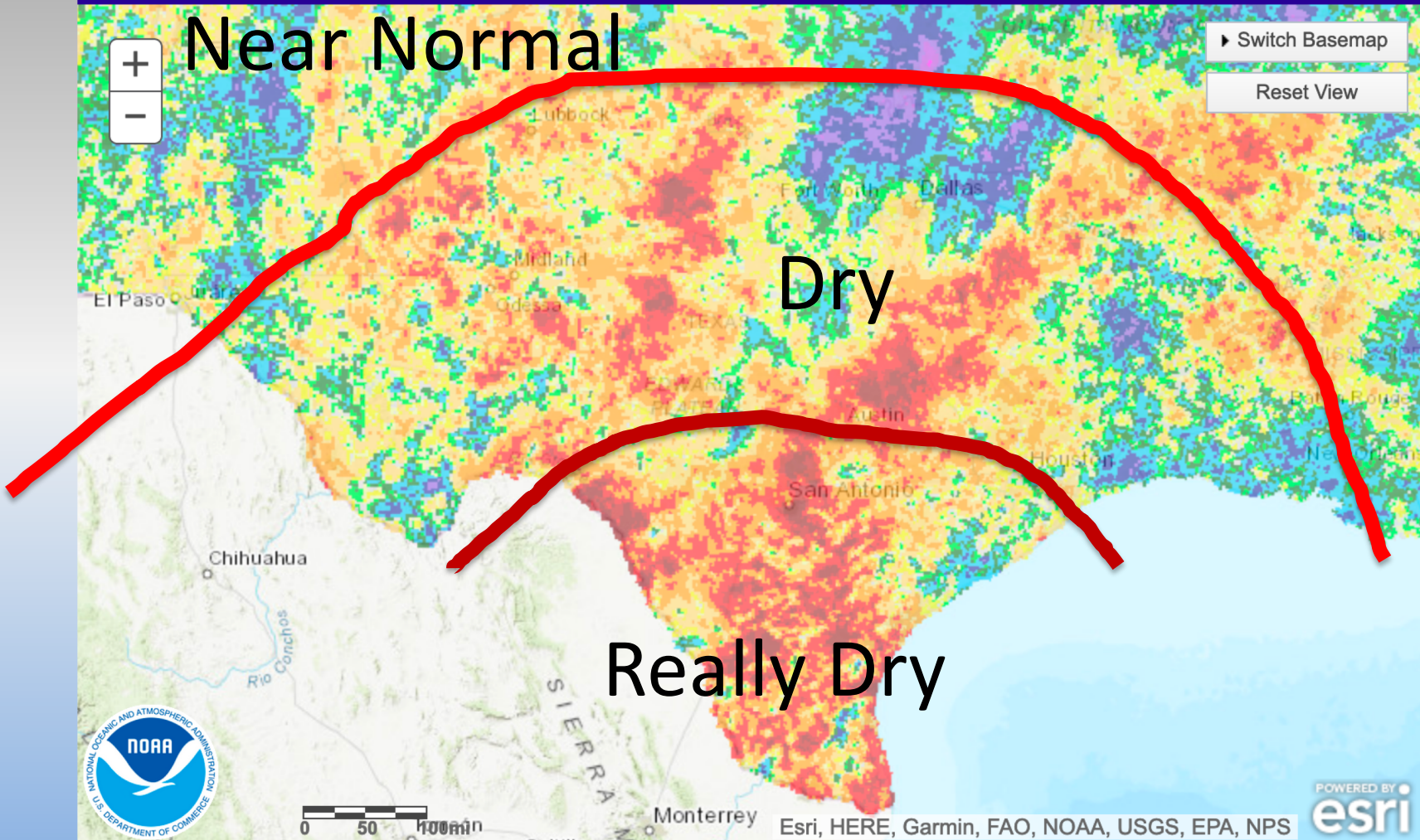
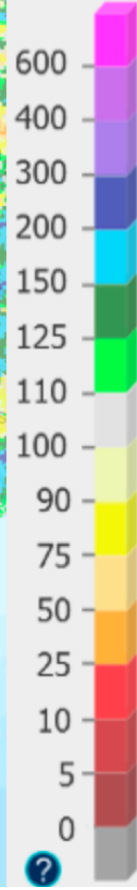
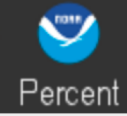
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# Near Normal

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TV



Displaying August, 2019 Monthly Percent of Normal Precipitation  
Valid on: September 01, 2019 12:00 UTC

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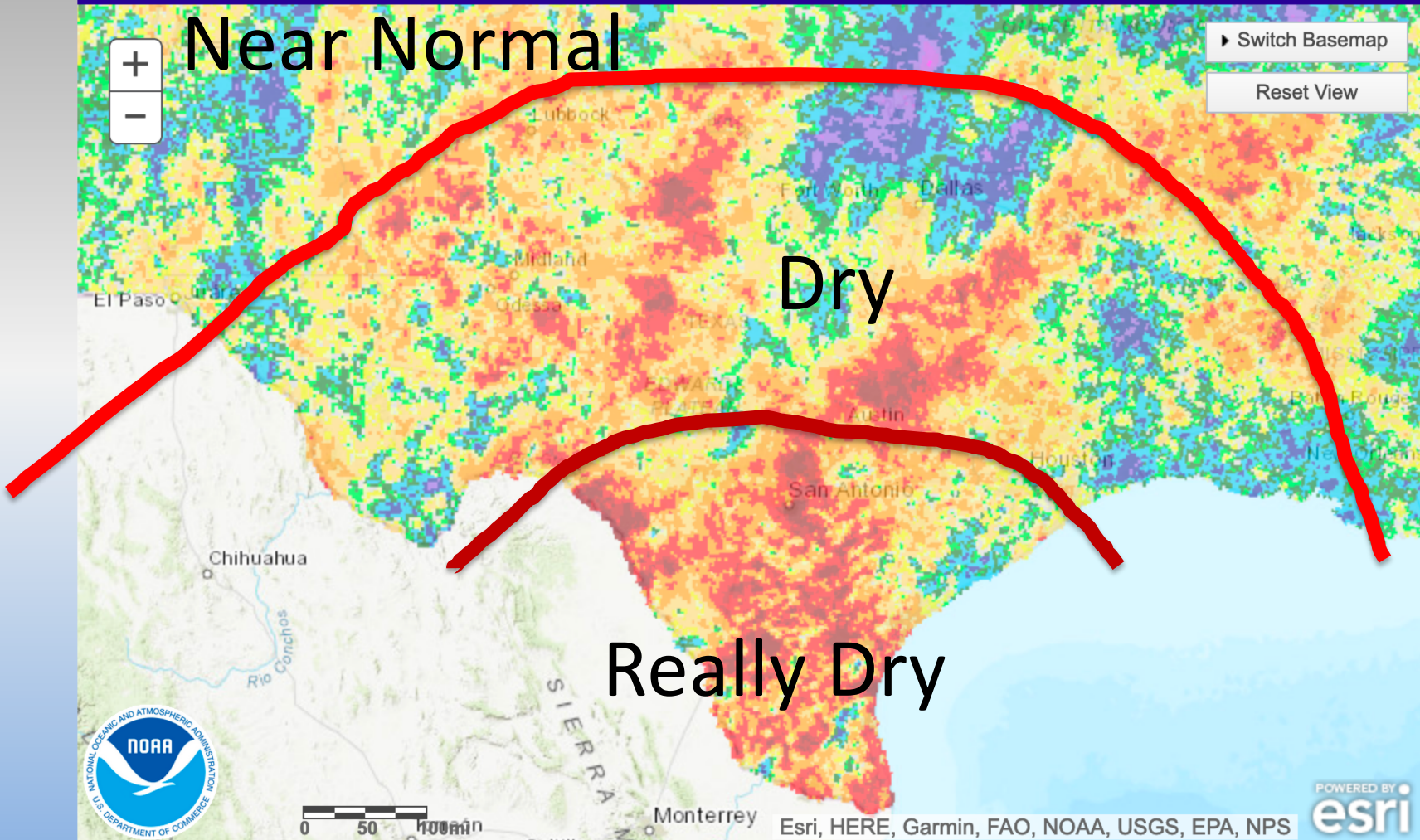
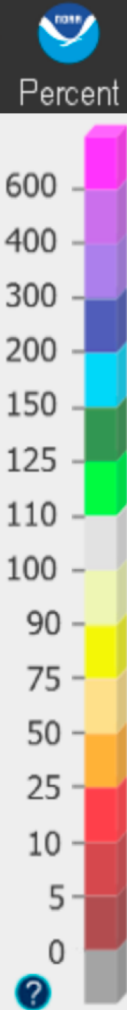
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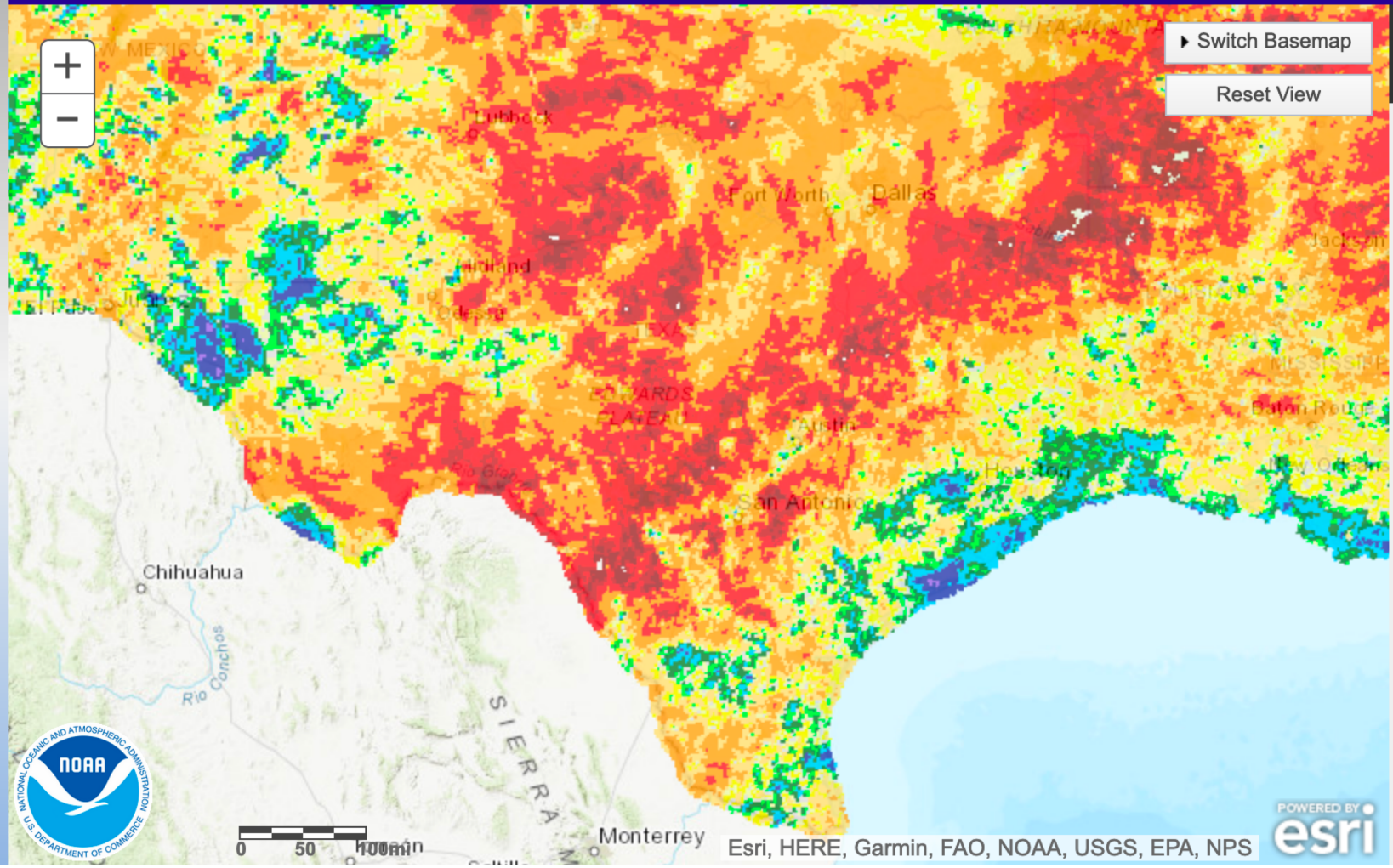


Displaying September, 2015 Monthly Percent of Normal Precipitation  
Valid on: October 01, 2015 12:00 UTC

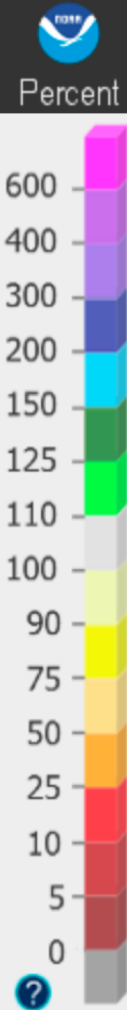
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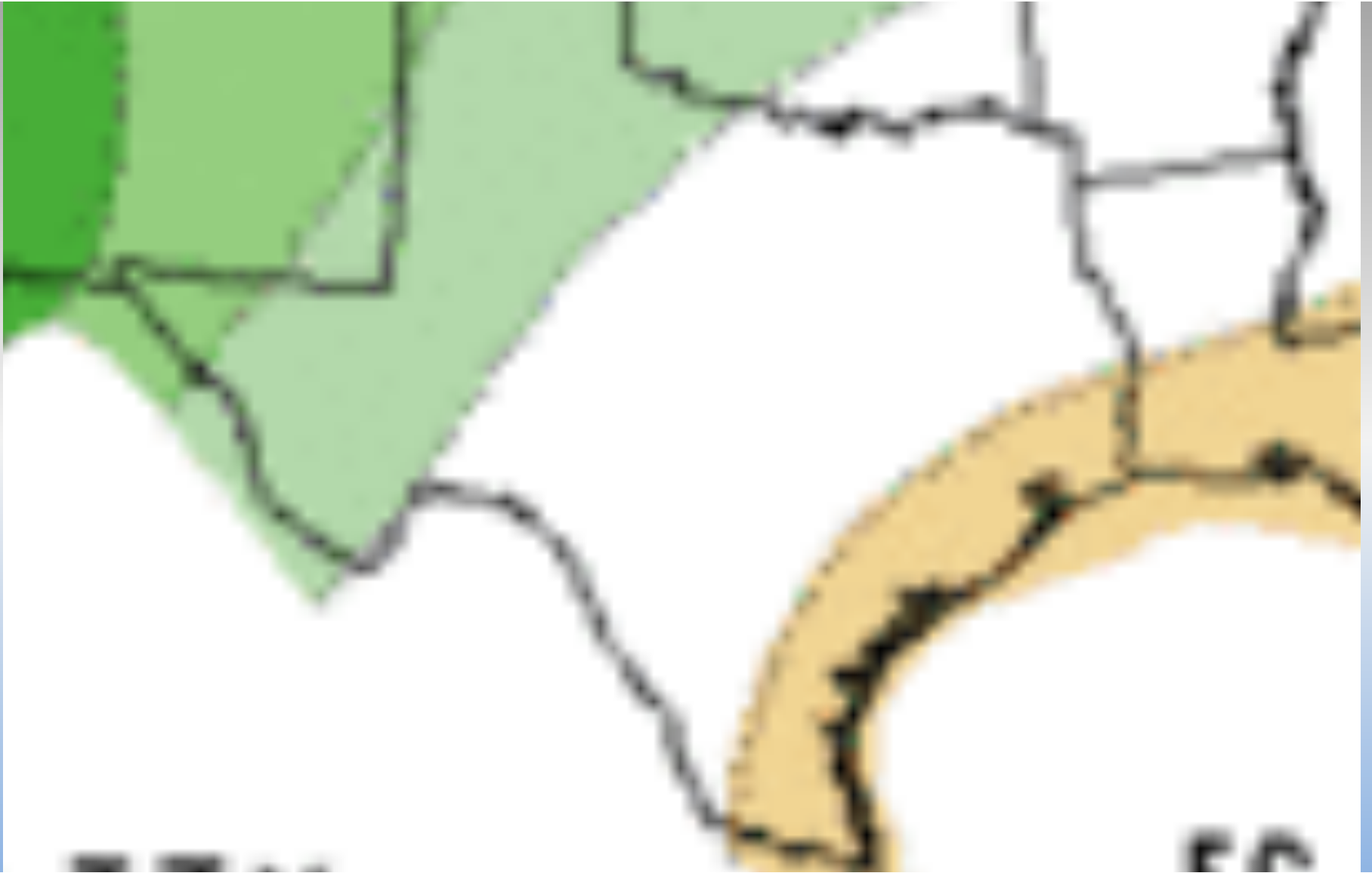


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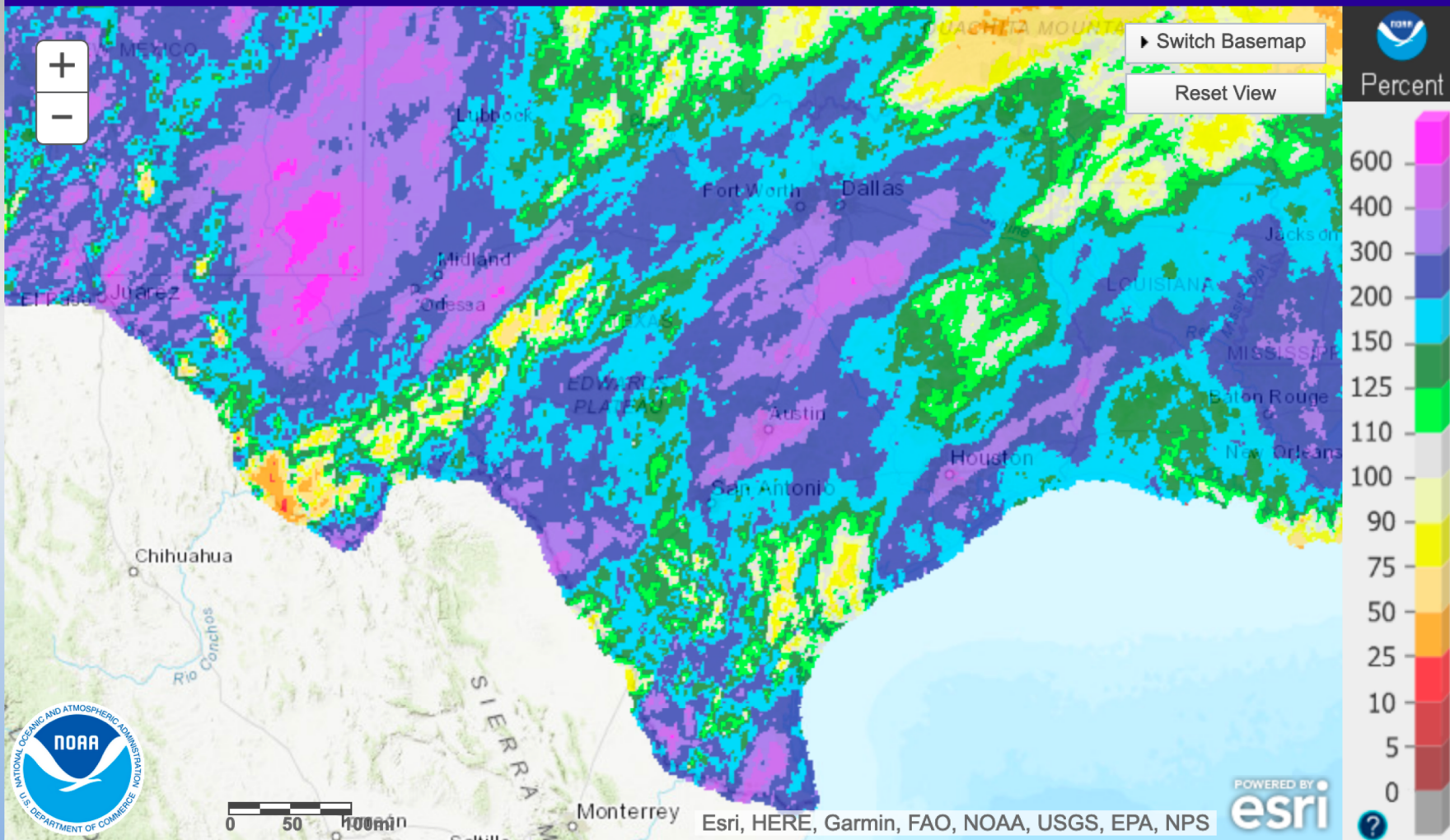


Displaying October, 2015 Monthly Percent of Normal Precipitation  
Valid on: November 01, 2015 12:00 UTC

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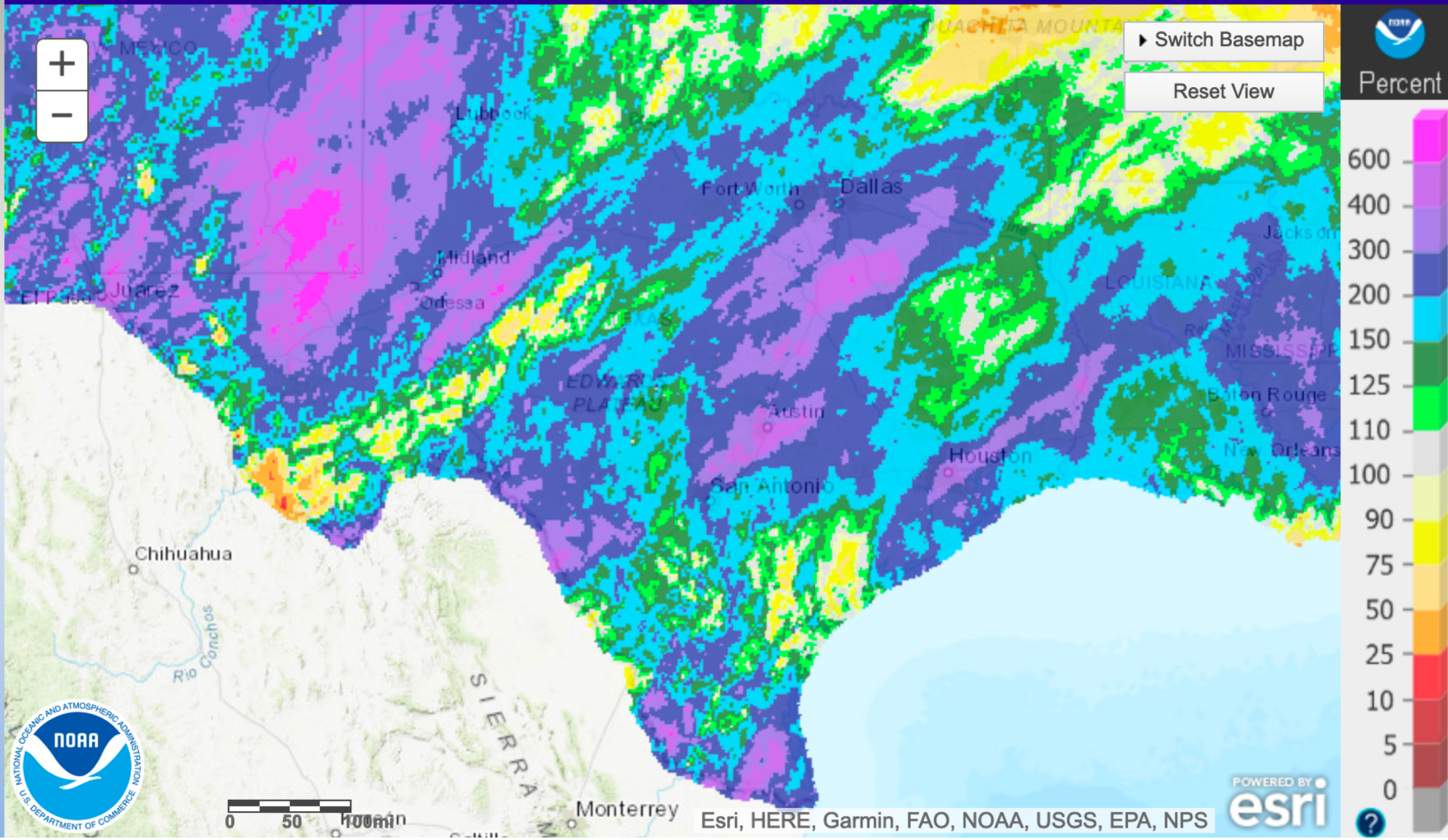


Displaying October, 2015 Monthly Percent of Normal Precipitation  
Valid on: November 01, 2015 12:00 UTC

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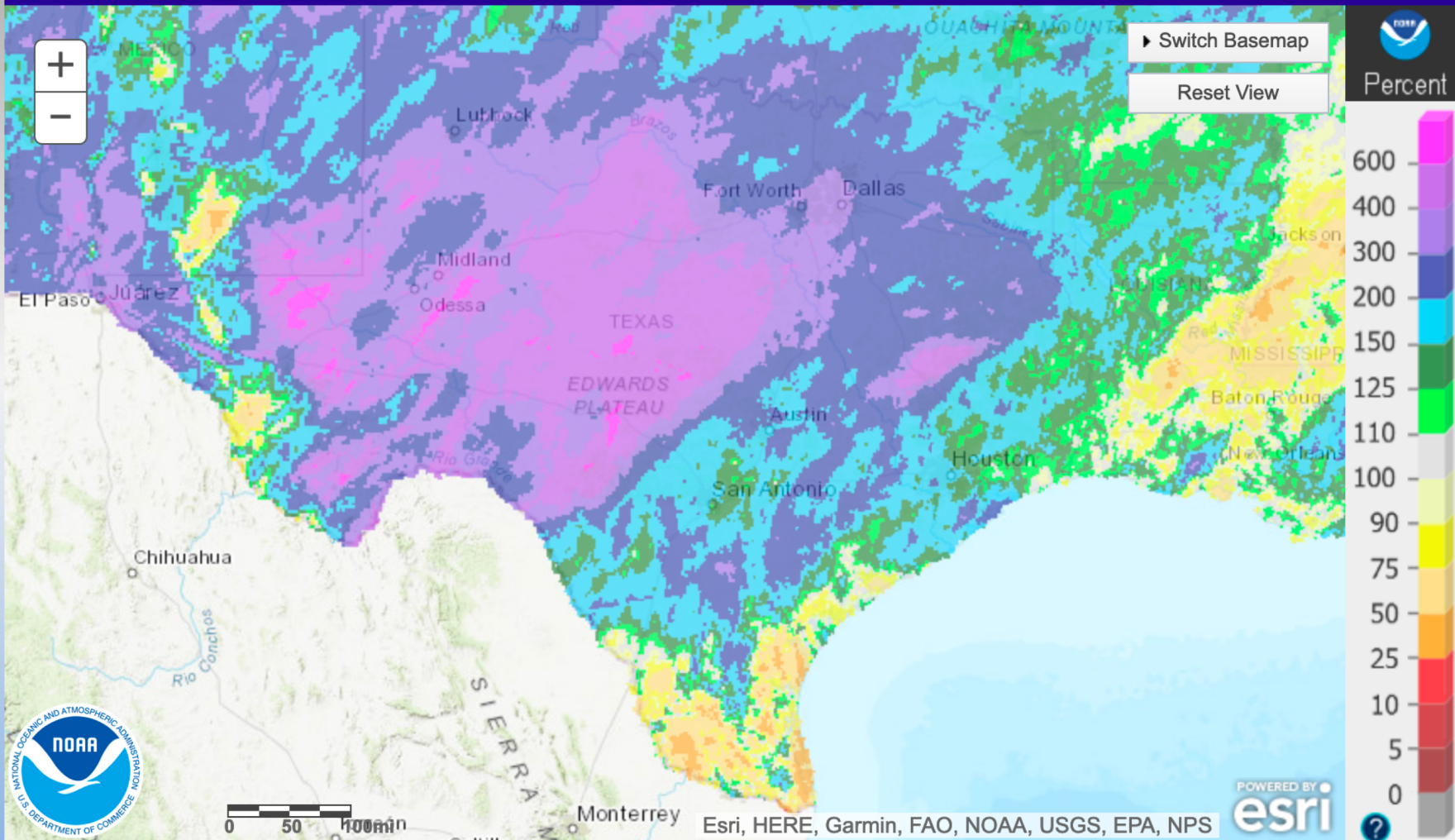


Displaying October, 2018 Monthly Percent of Normal Precipitation  
Valid on: November 01, 2018 12:00 UTC

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Displaying July, 2011 Monthly Percent of Normal Precipitation  
Valid on: August 01, 2011 12:00 UTC

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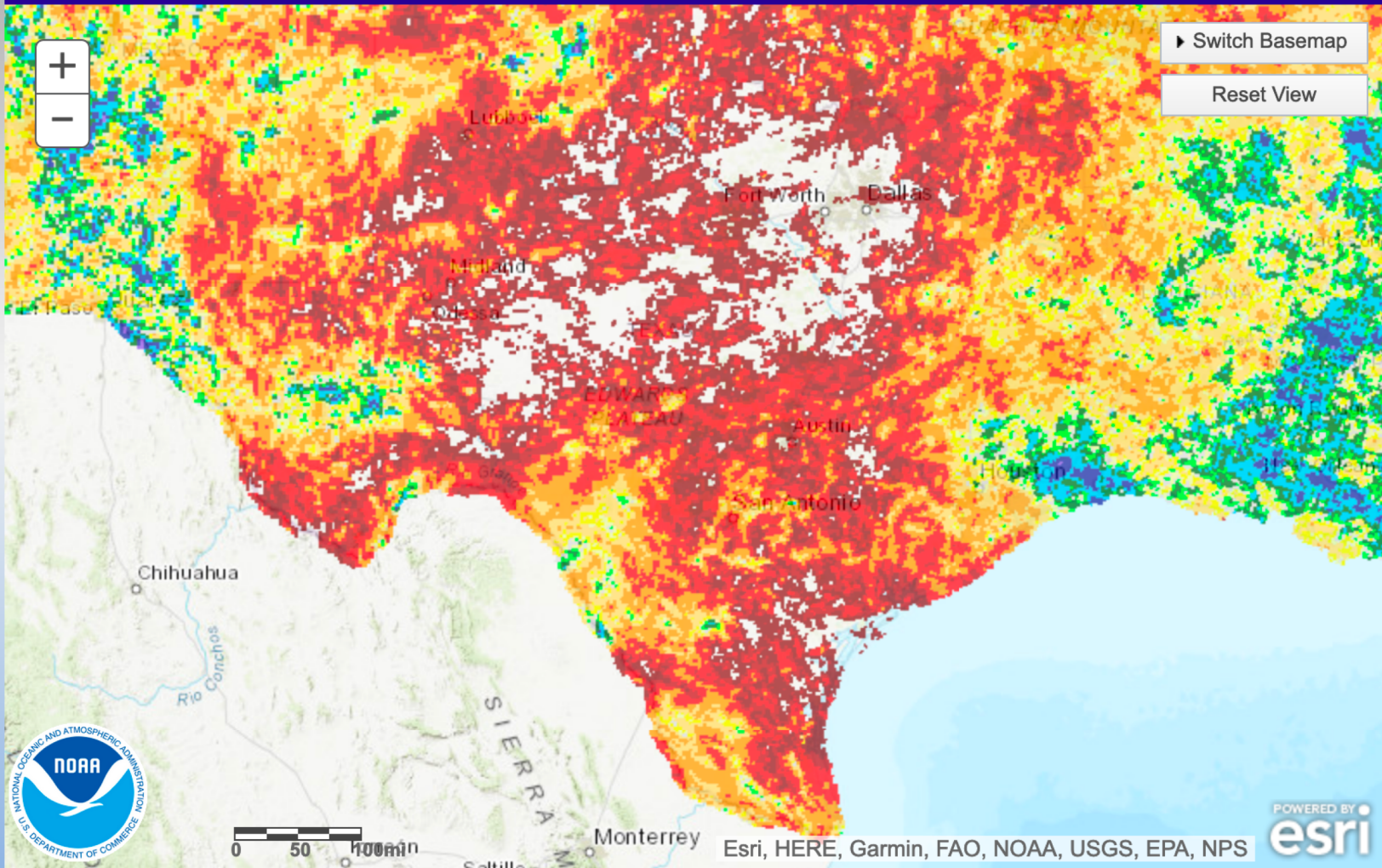
Permalink

BOOKMARK

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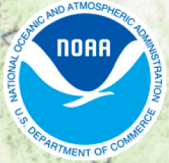
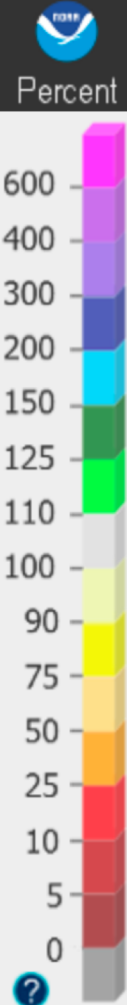
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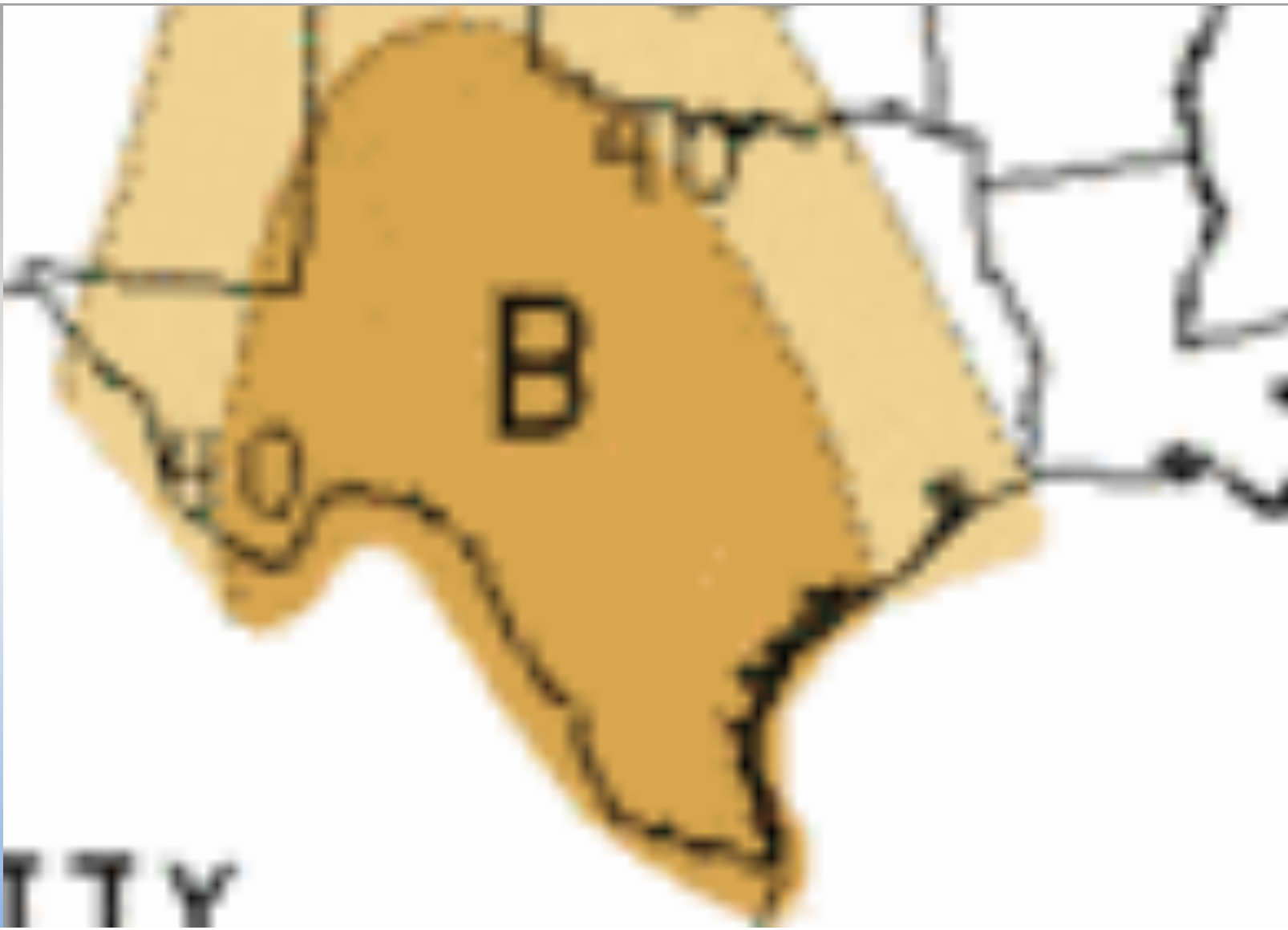
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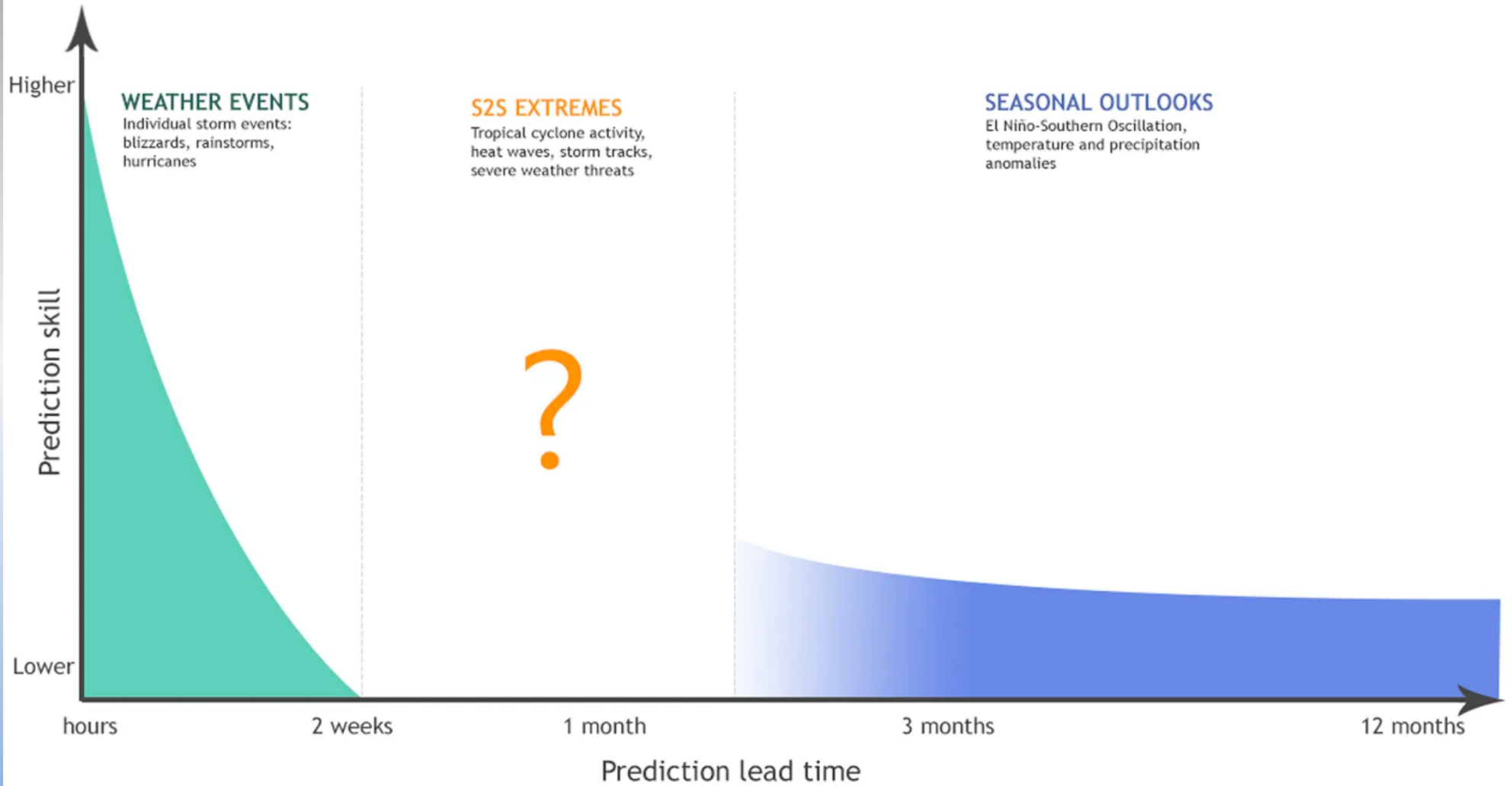
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# Drought vs. Flood

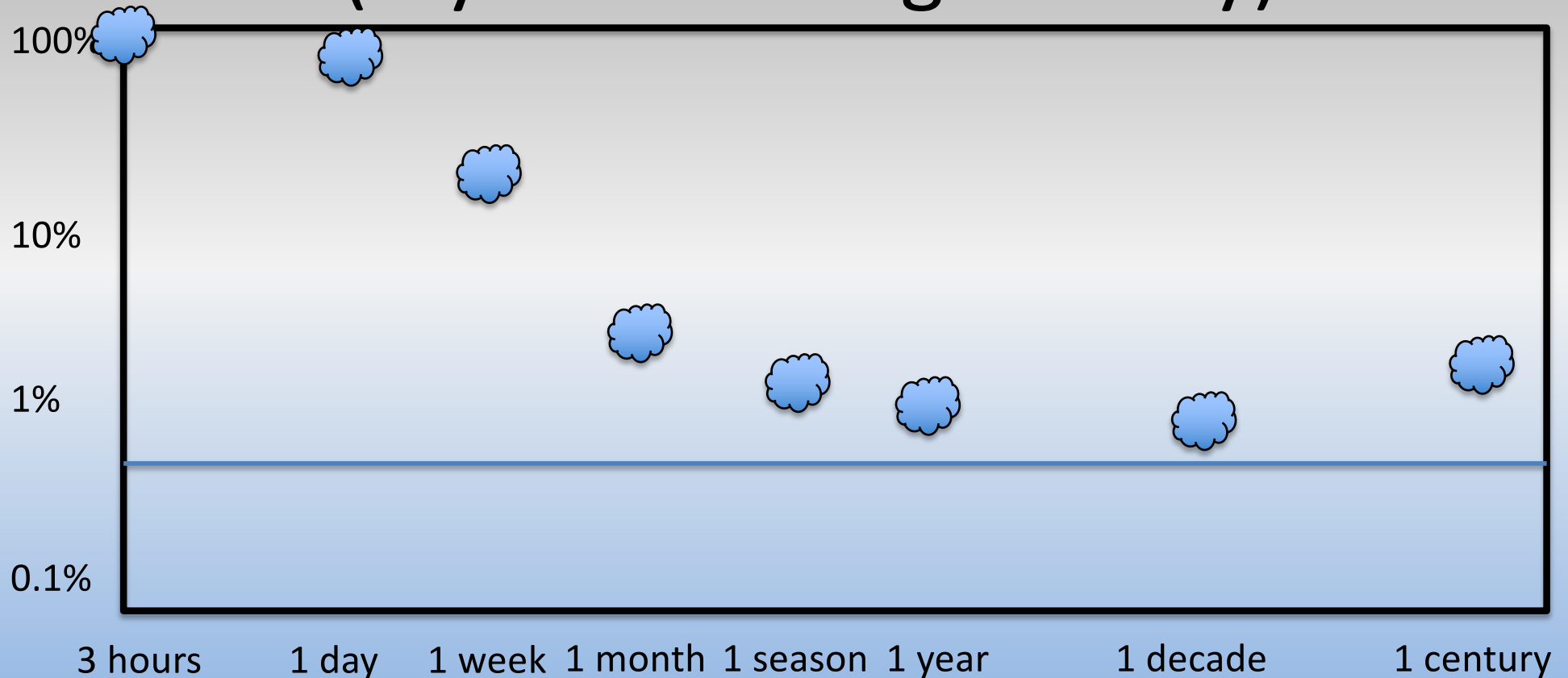
- Droughts are bigger
- Droughts last longer
- Droughts develop slowly
- Short-range prediction opportunity: flood
- Long-range prediction opportunity: drought

# The S2S Prediction Gap

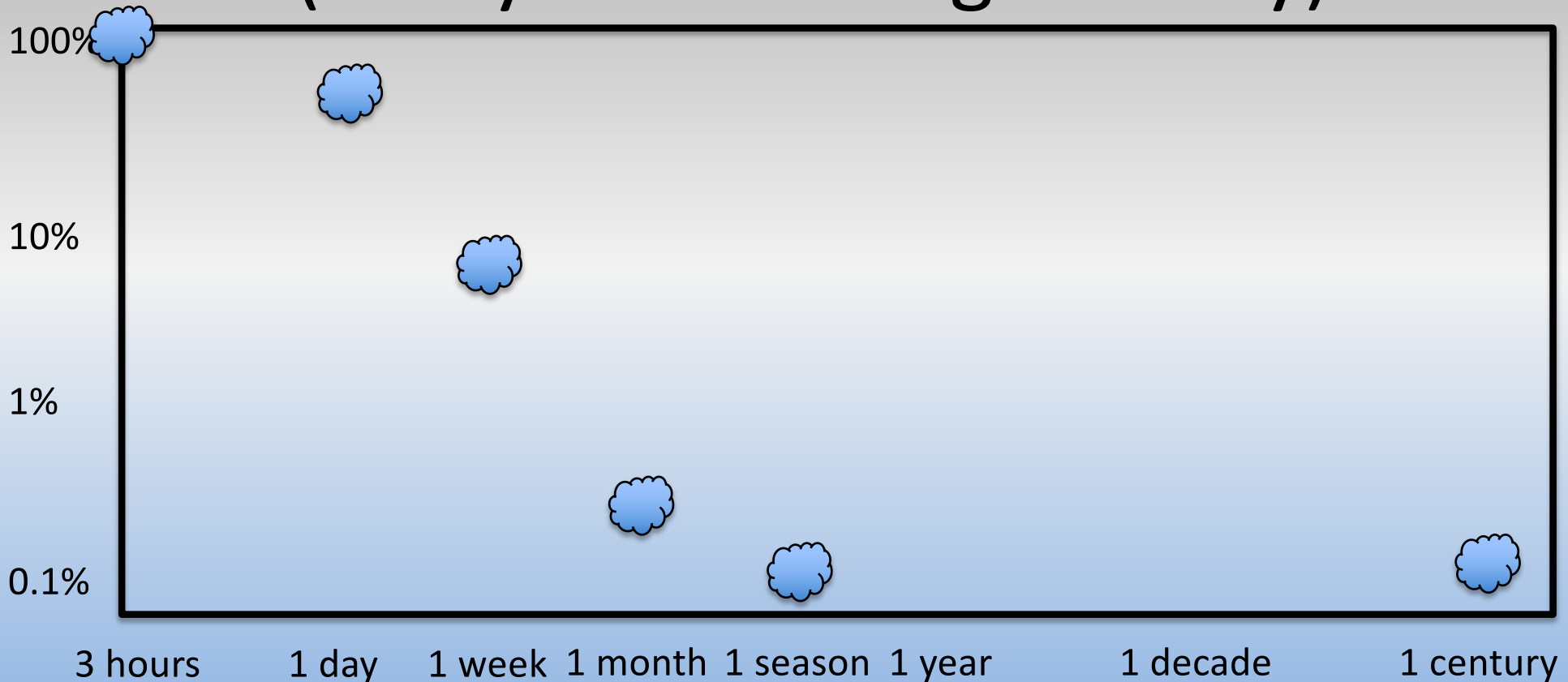
Source: Mariotti et al. 2018 npj/cas



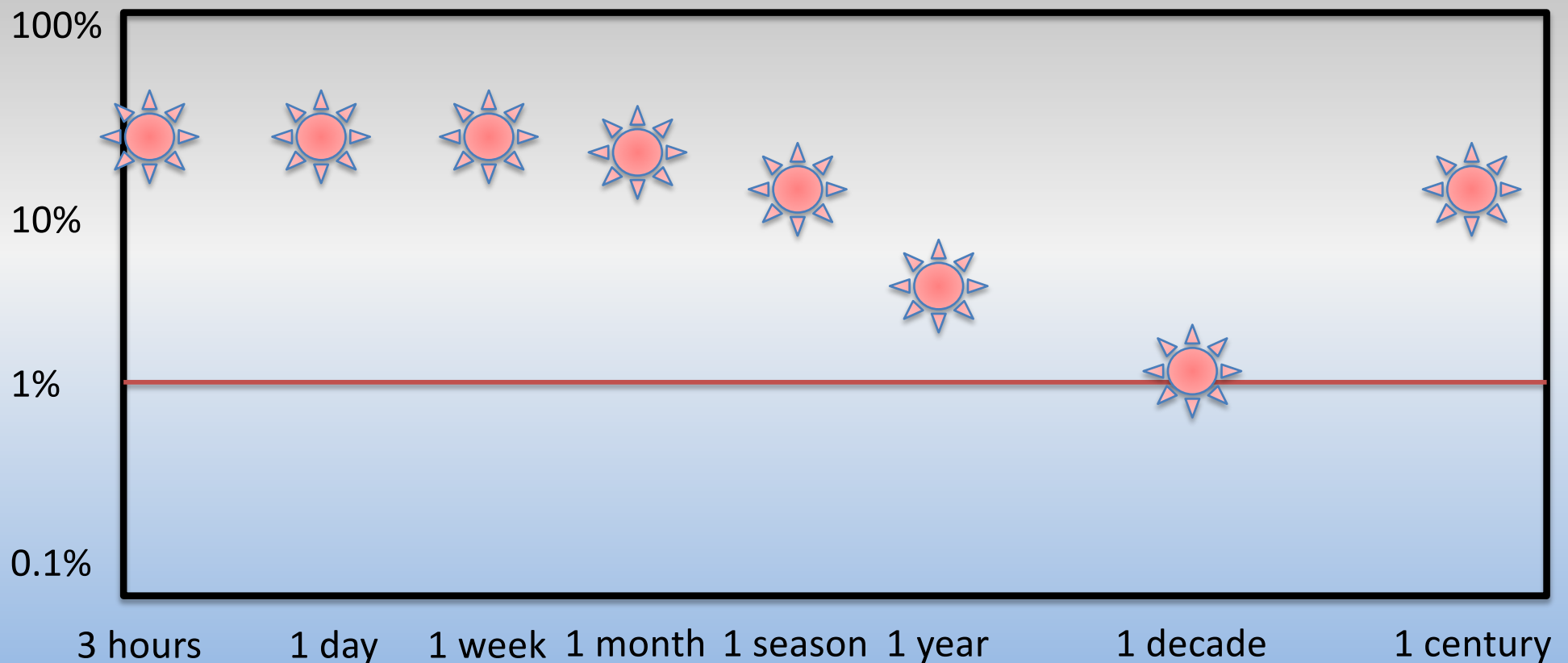
# Maximum Predictable Probability? (1-y flood on a given day)



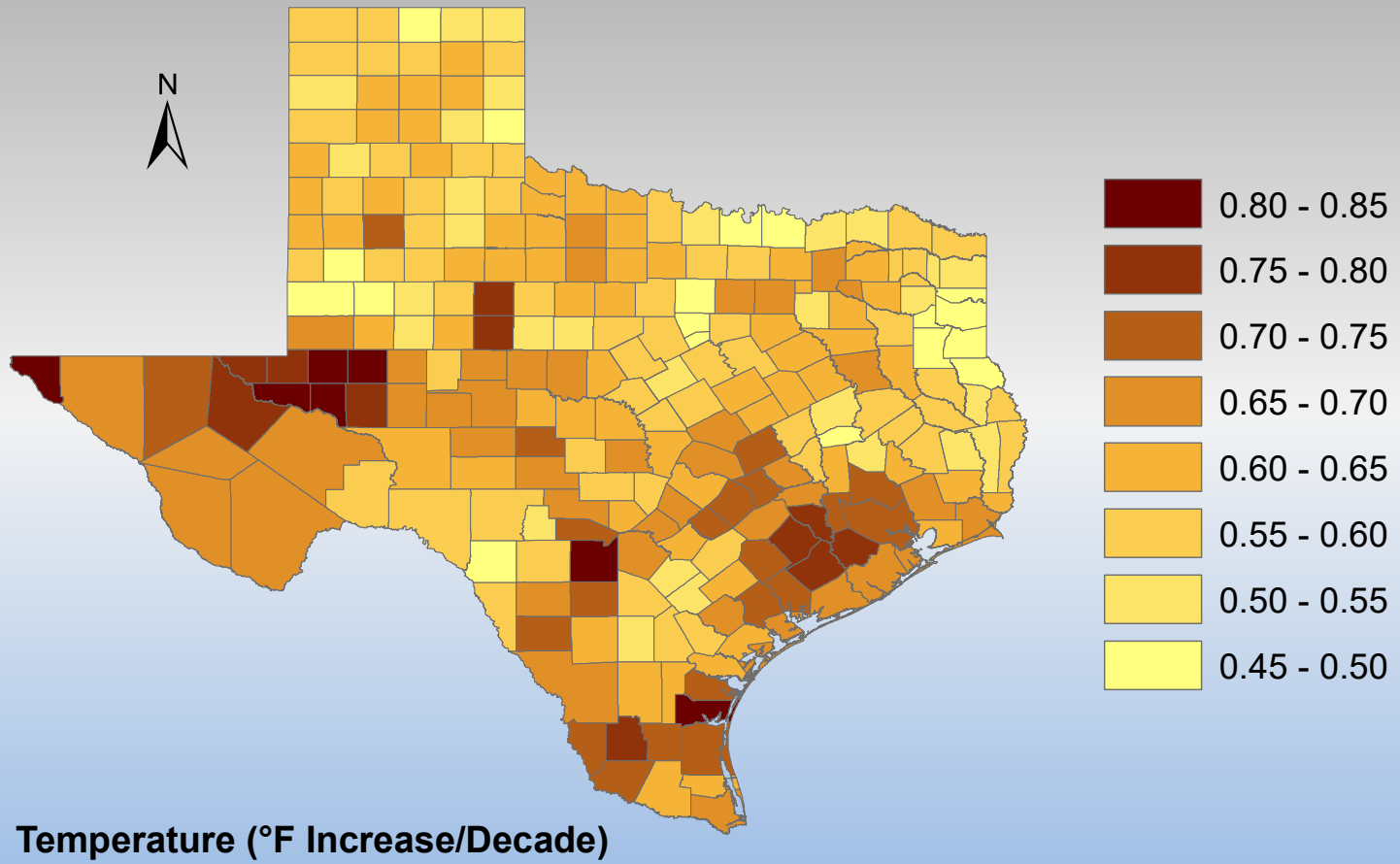
# Maximum Predictable Probability? (100-y flood on a given day)



# Maximum Predictable Probability? (100-y drought in a given year)



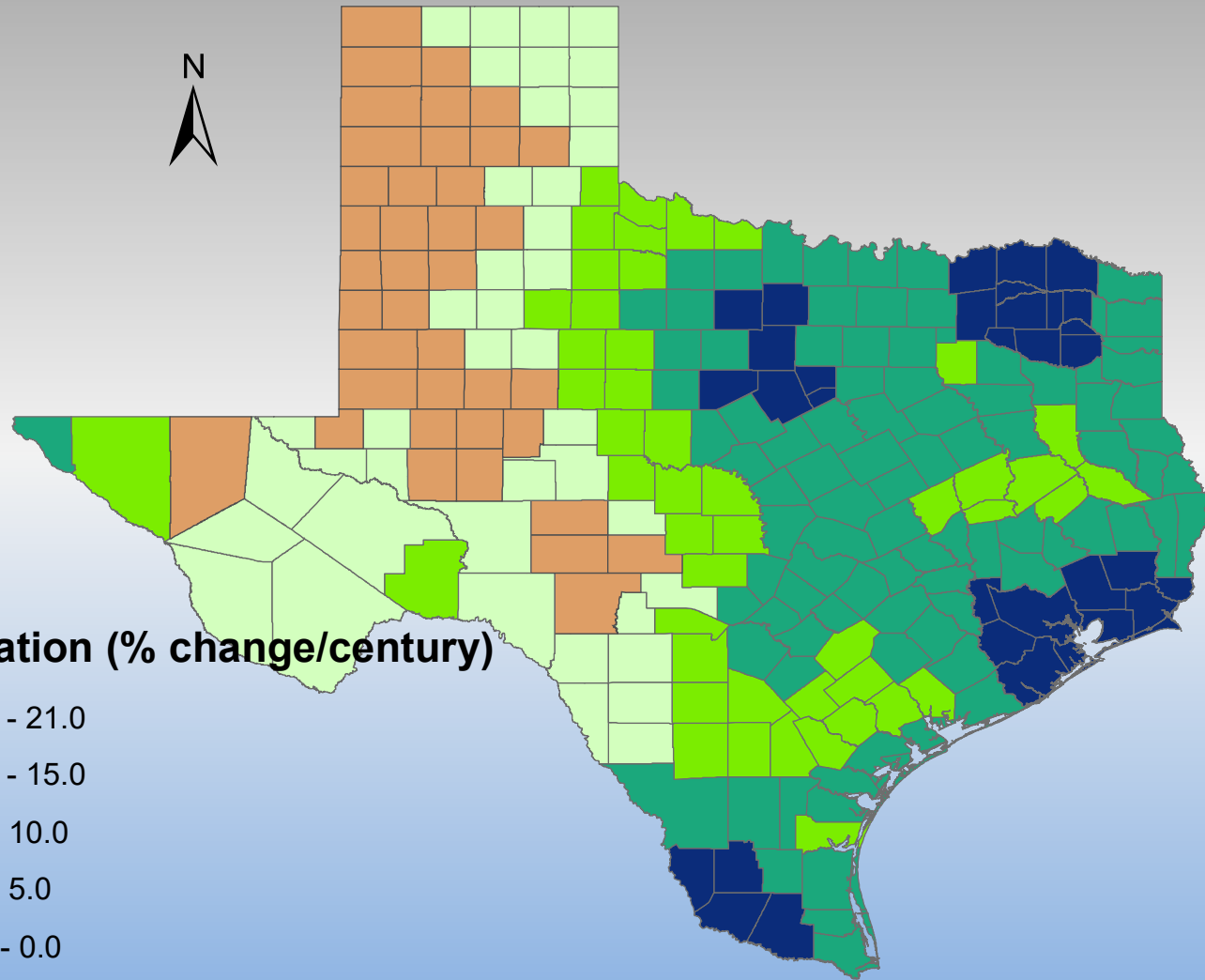
# Temperature Trends, 1975-2018



# Precipitation Trends, 1895-2018

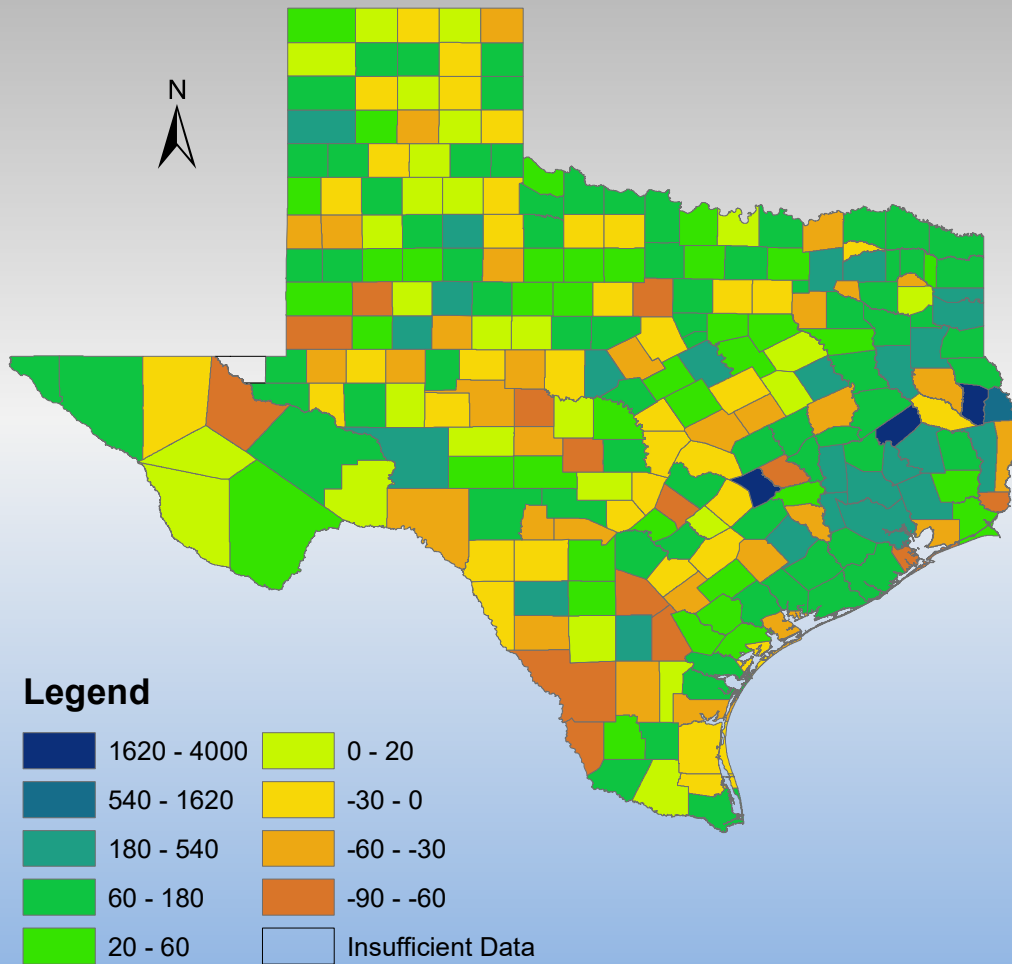


## Precipitation (% change/century)





10 year Return Period, One-Day Rainfall  
Raw Percent Change in Frequency over Period of Record



# Contact Information

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- Social media: **climatexas**