

2019 SPRING WEATHER THREAT OUTLOOK

TORNADOES, HIGH WINDS, HAIL, FLOODING, DROUGHT

SPRING WEATHER THREATS



SEVERE WEATHER

Tornadoes,
Large Hail,
High Wind Gusts

Excessive Rainfall
and Snowmelt/Ice Jam
Flooding

Drought

Temperatures

SPRING SEVERE WEATHER

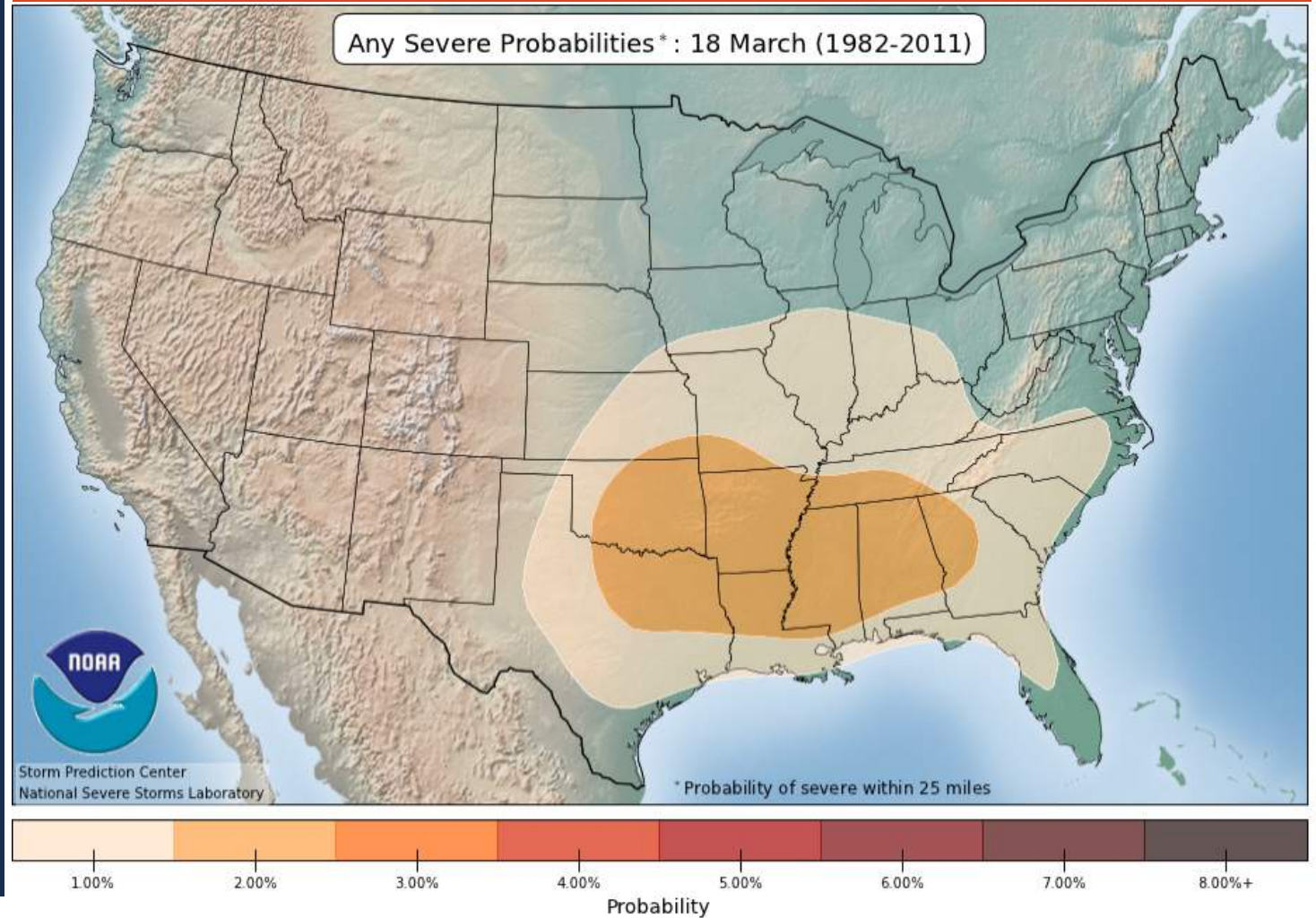


SEVERE THUNDERSTORM INGREDIENTS

- Warm, humid flow of air in the lower atmosphere
- More Spring sunshine to cause heating and rising air – more “lift”
- Cold, dry flow of air in the upper atmosphere
- Convergent wind boundaries to create “lift”
- Veering of winds with height - to increase shear and rotation

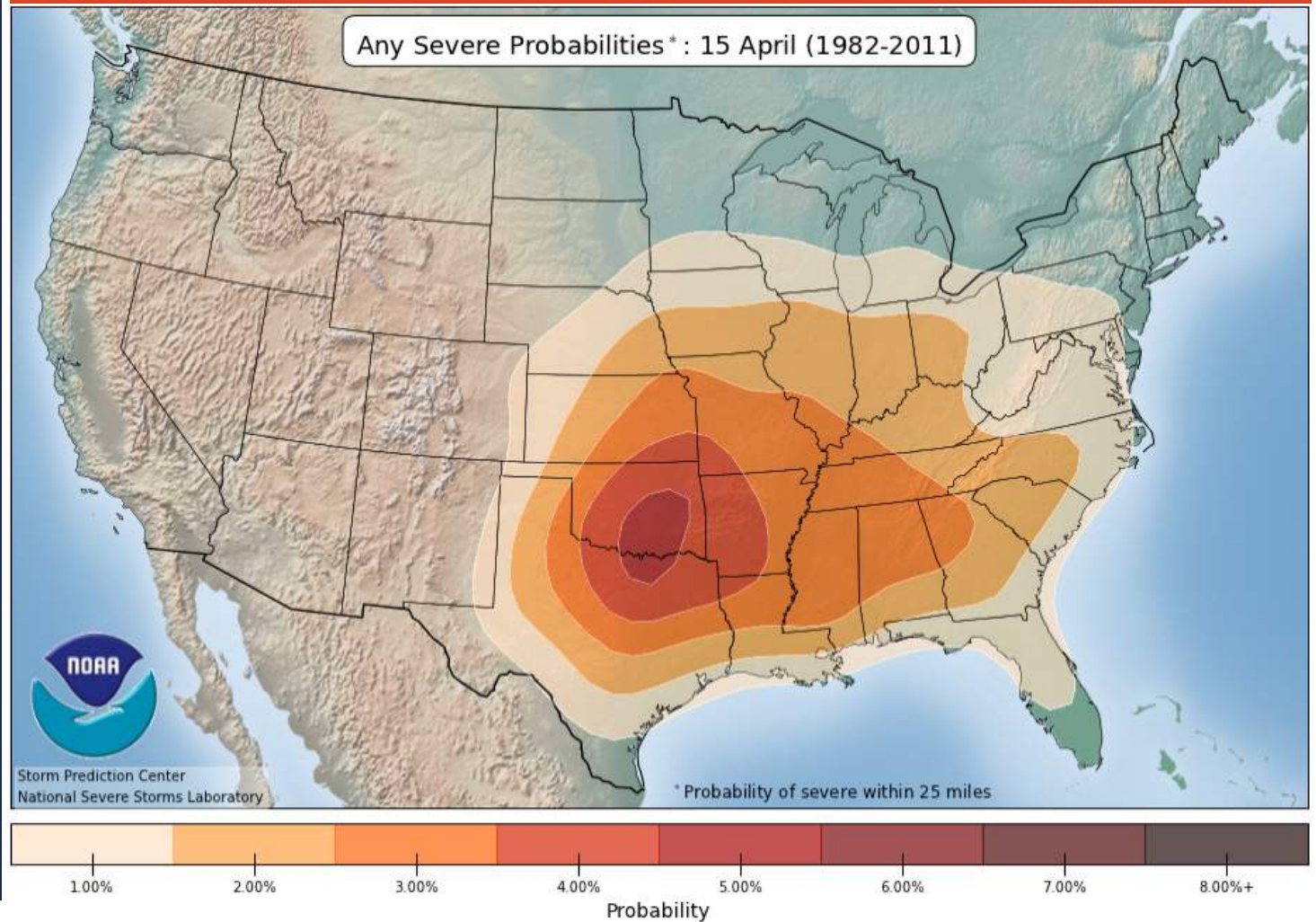
SPRING SEVERE WEATHER

Severe Weather Climatology



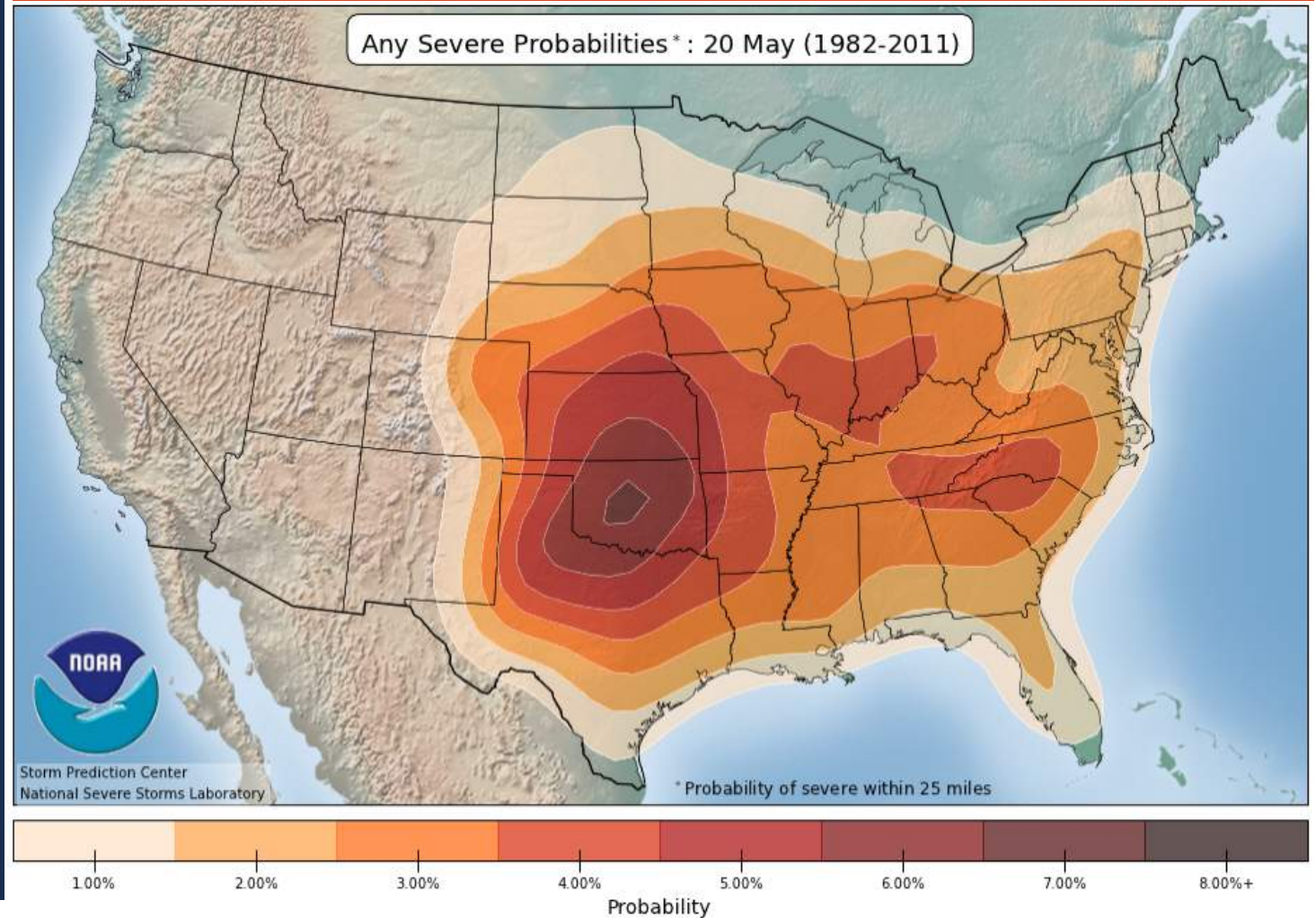
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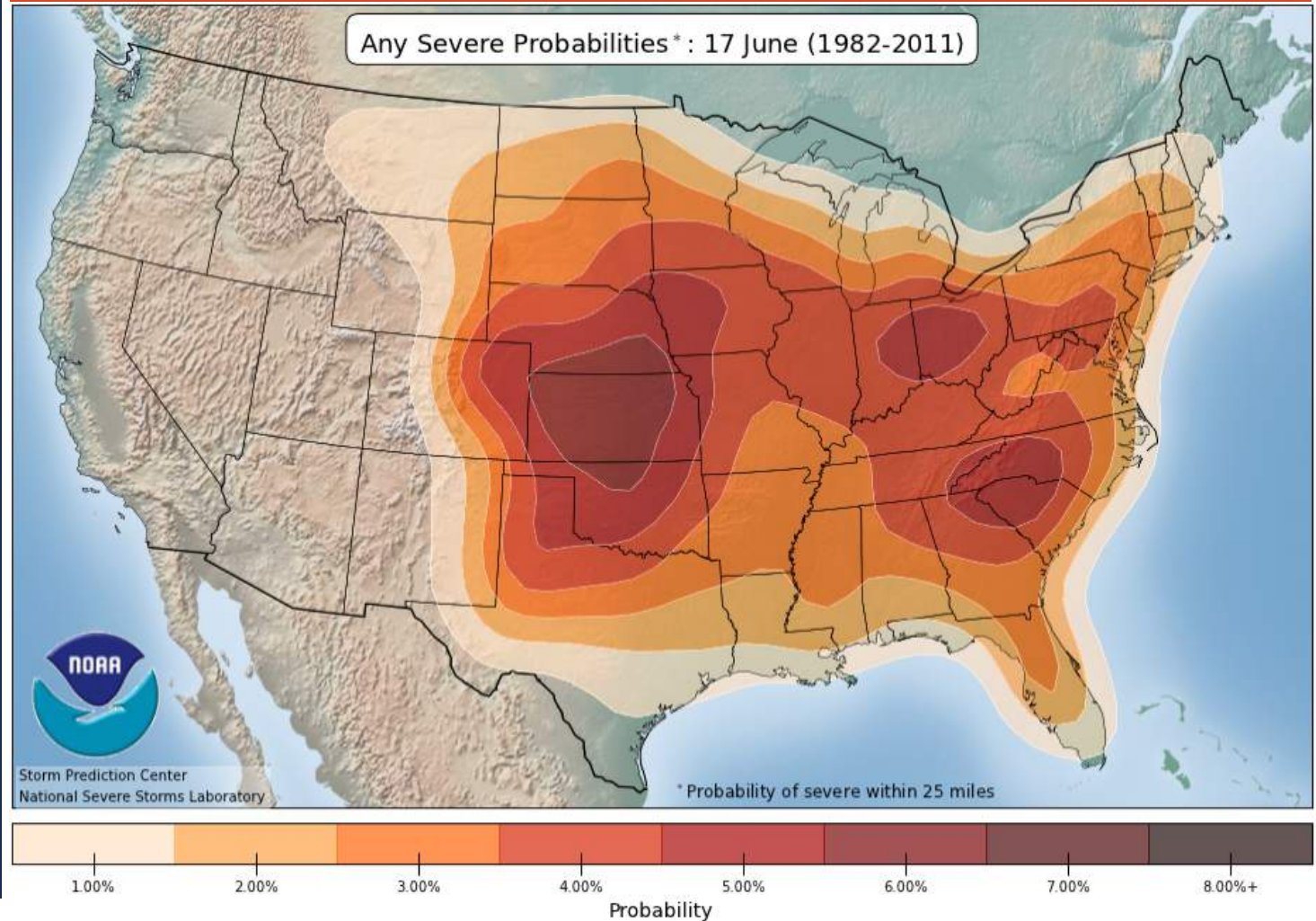
SPRING SEVERE WEATHER

Severe Weather Climatology



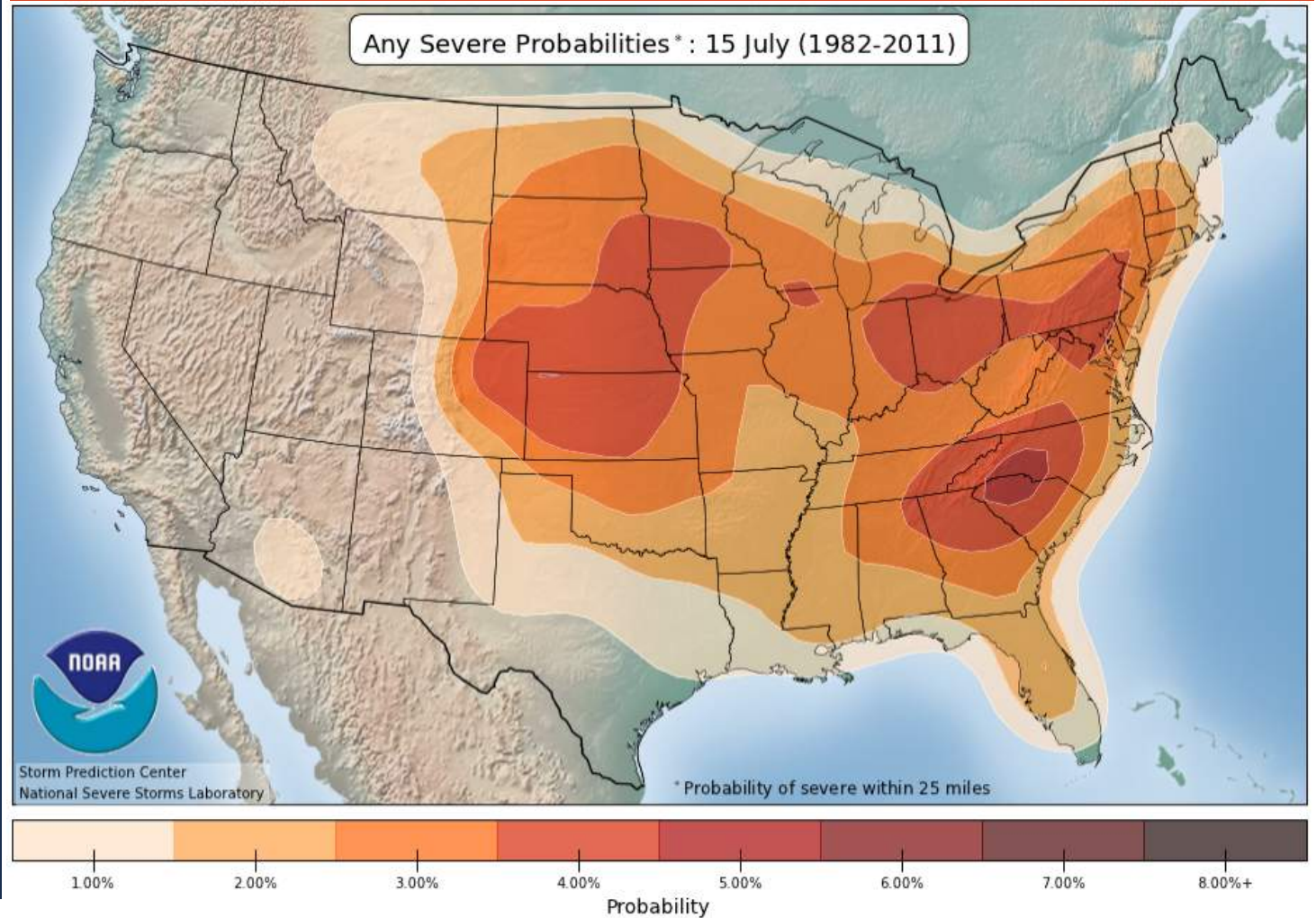
SUMMER SEVERE WEATHER

Severe Weather Climatology



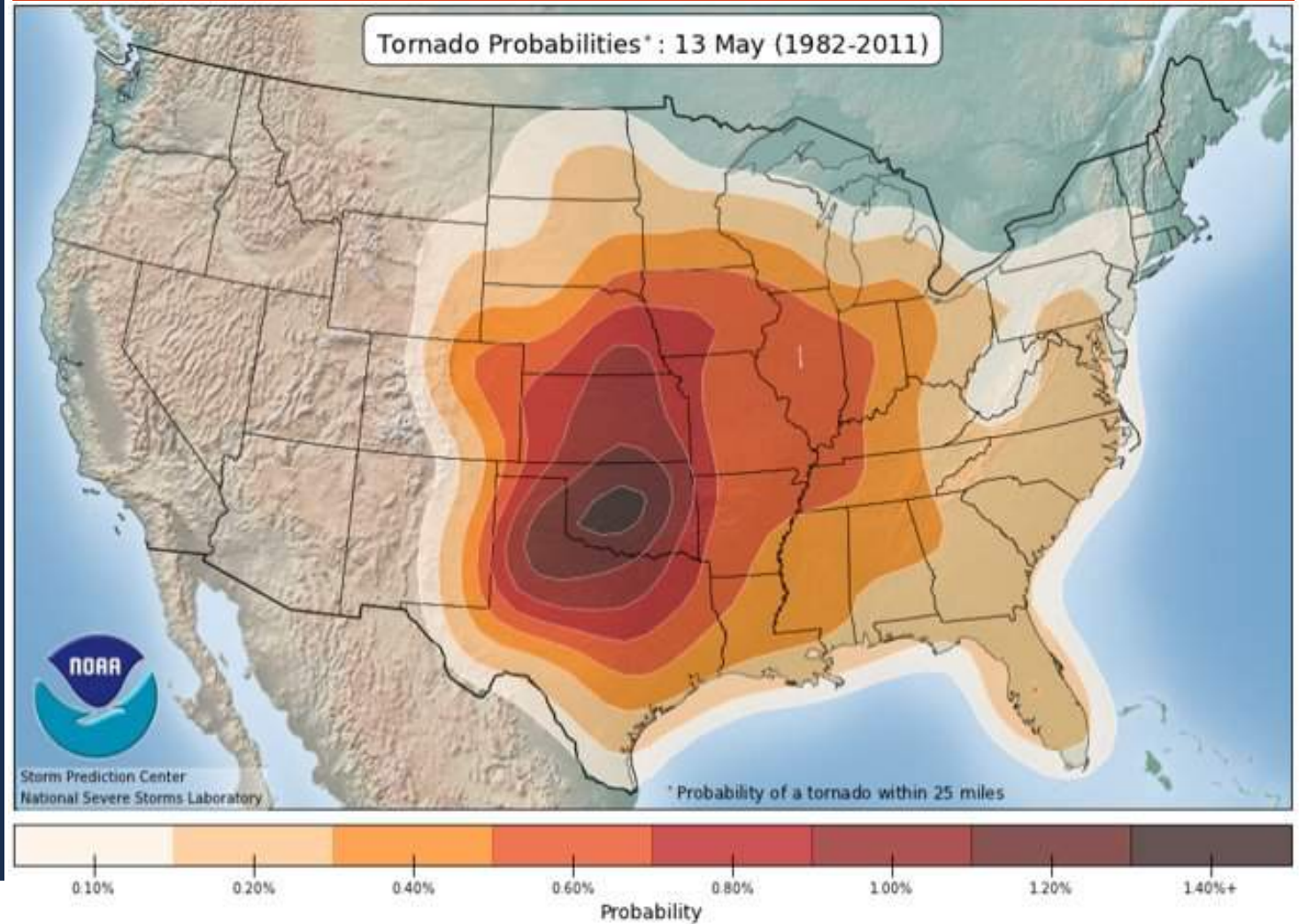
SUMMER SEVERE WEATHER

Severe Weather Climatology



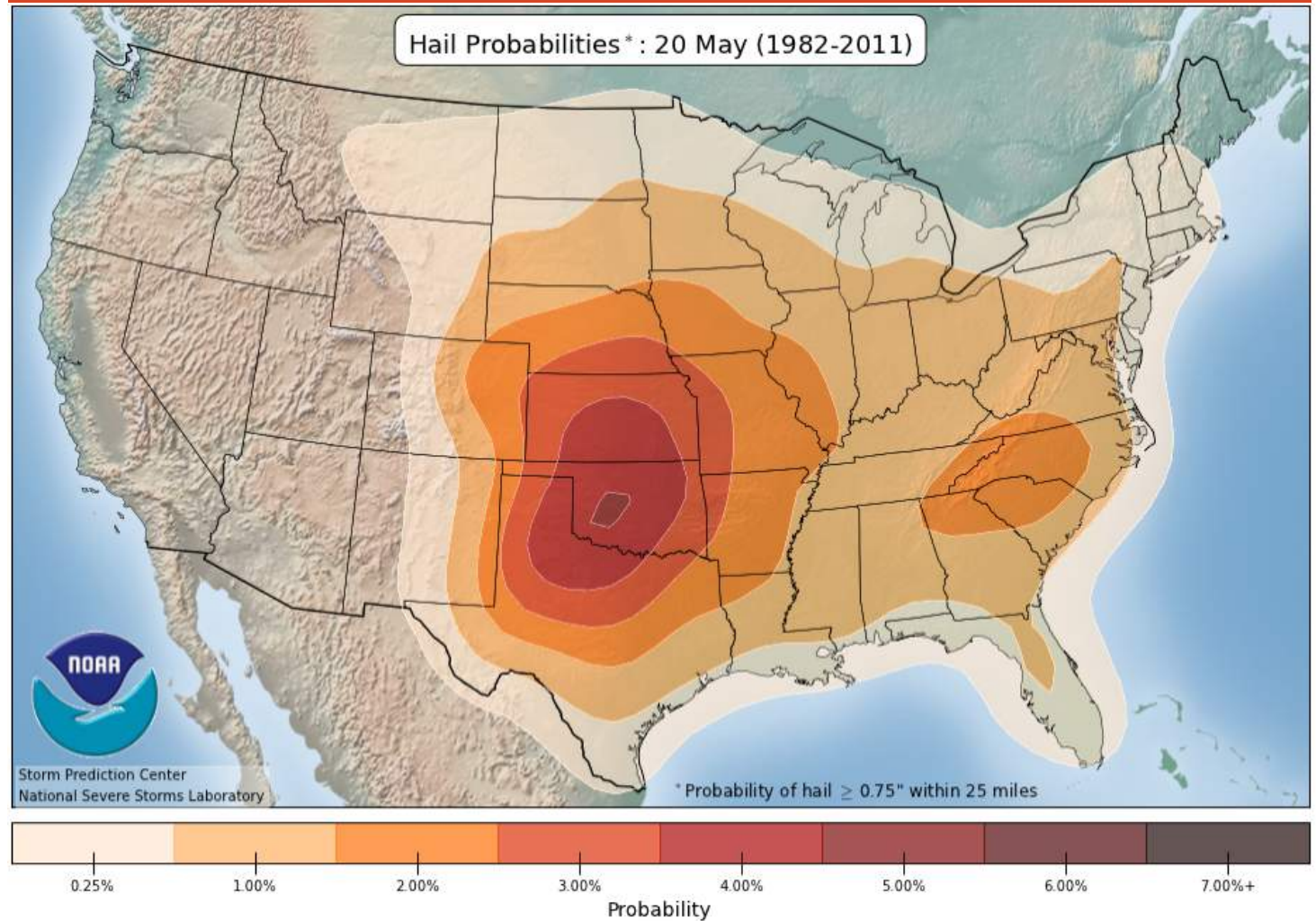
SPRING SEVERE WEATHER

Tornado Climatology



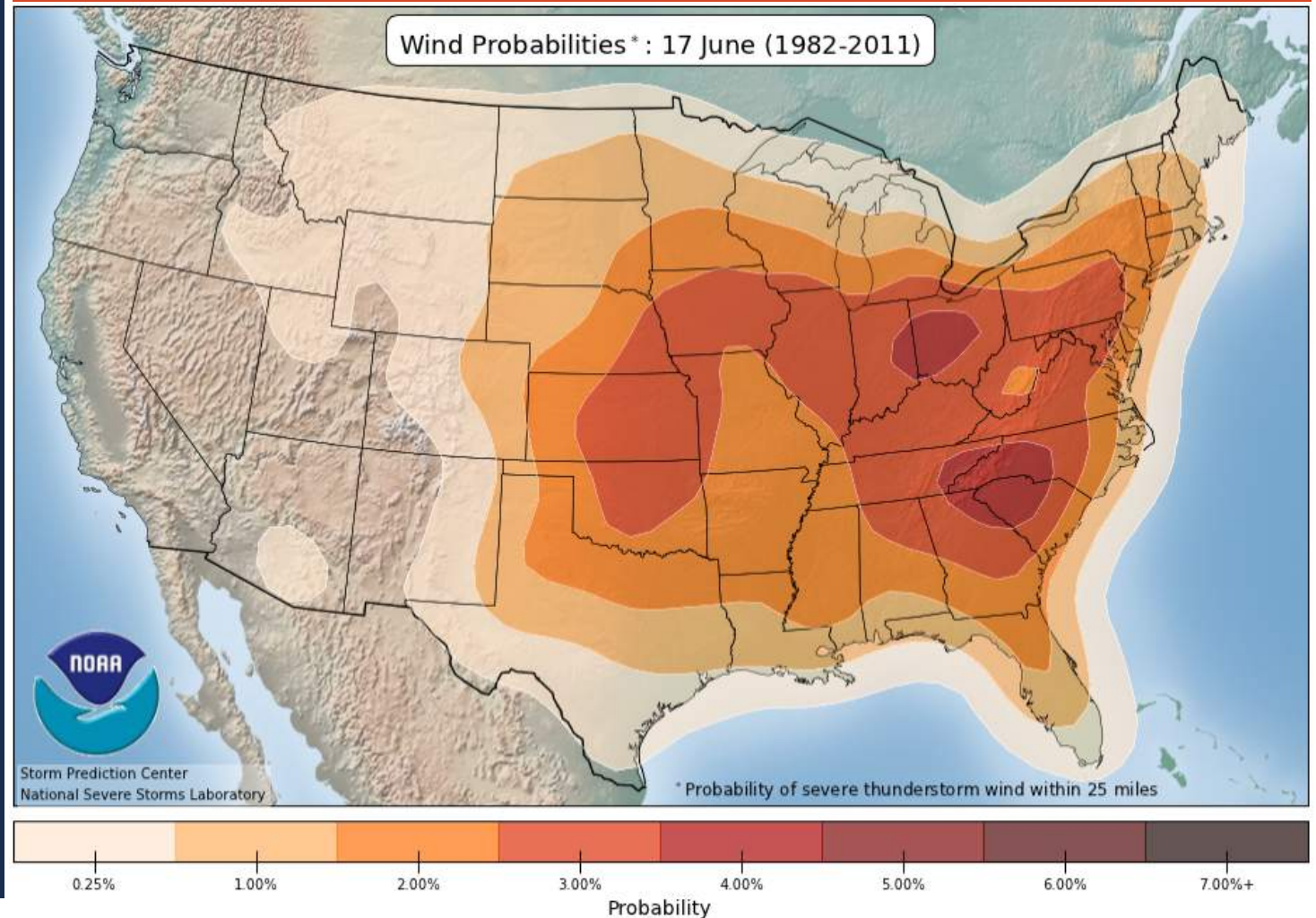
SEVERE WEATHER

Peak Large Hail Climatology



SEVERE WEATHER

Peak High Wind Gust Climatology



SEVERE WEATHER

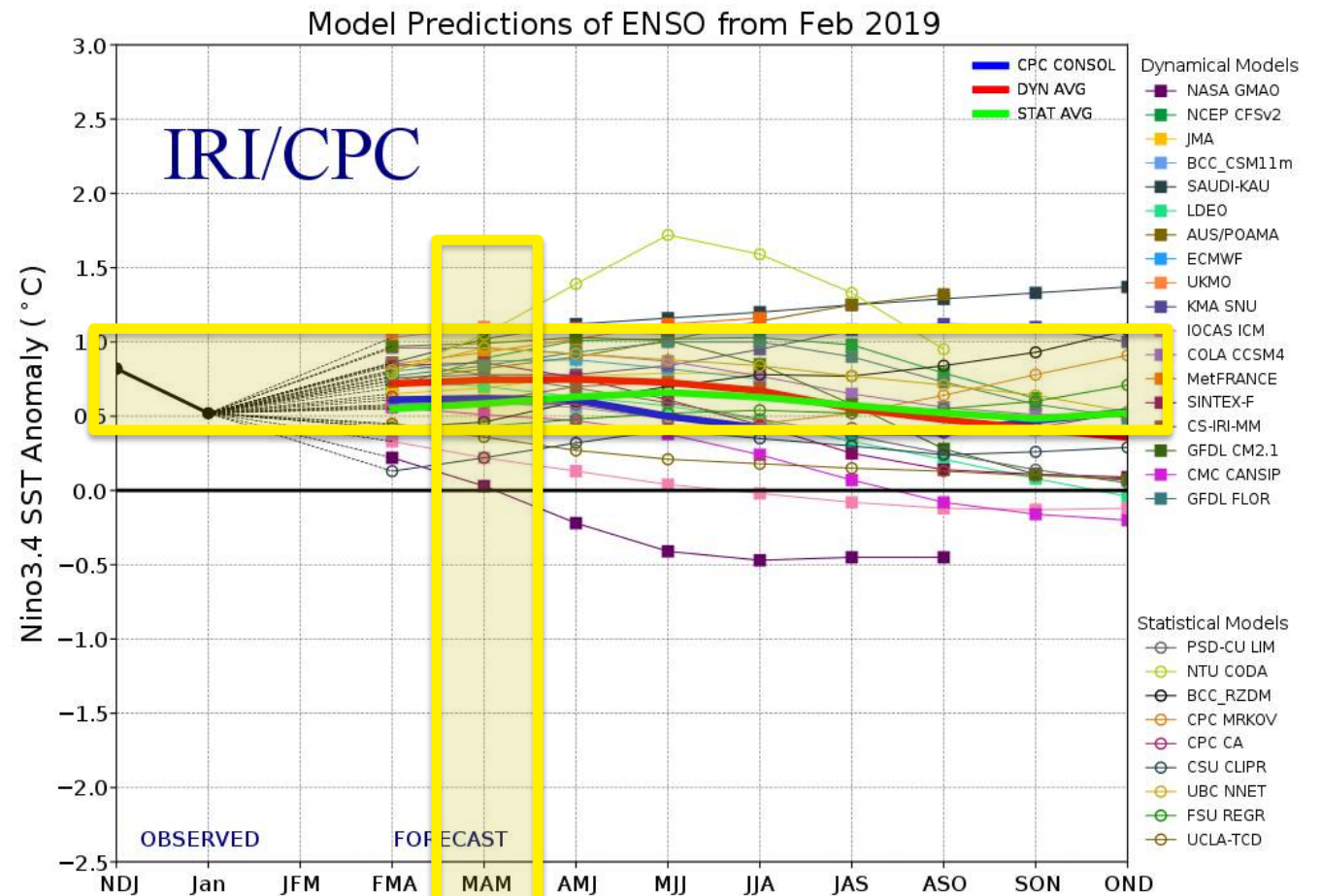


CLIMATOLOGY SUMMARY

- Peak for any severe event is May through June
- Tornadoes peak in May/June – most likely in Tornado Alley
- High thunderstorm wind gusts peak in June – more common east of the Mississippi
- Large hail events peak in May – more common between Mississippi and Rockies
- Very low probabilities for severe weather in the West

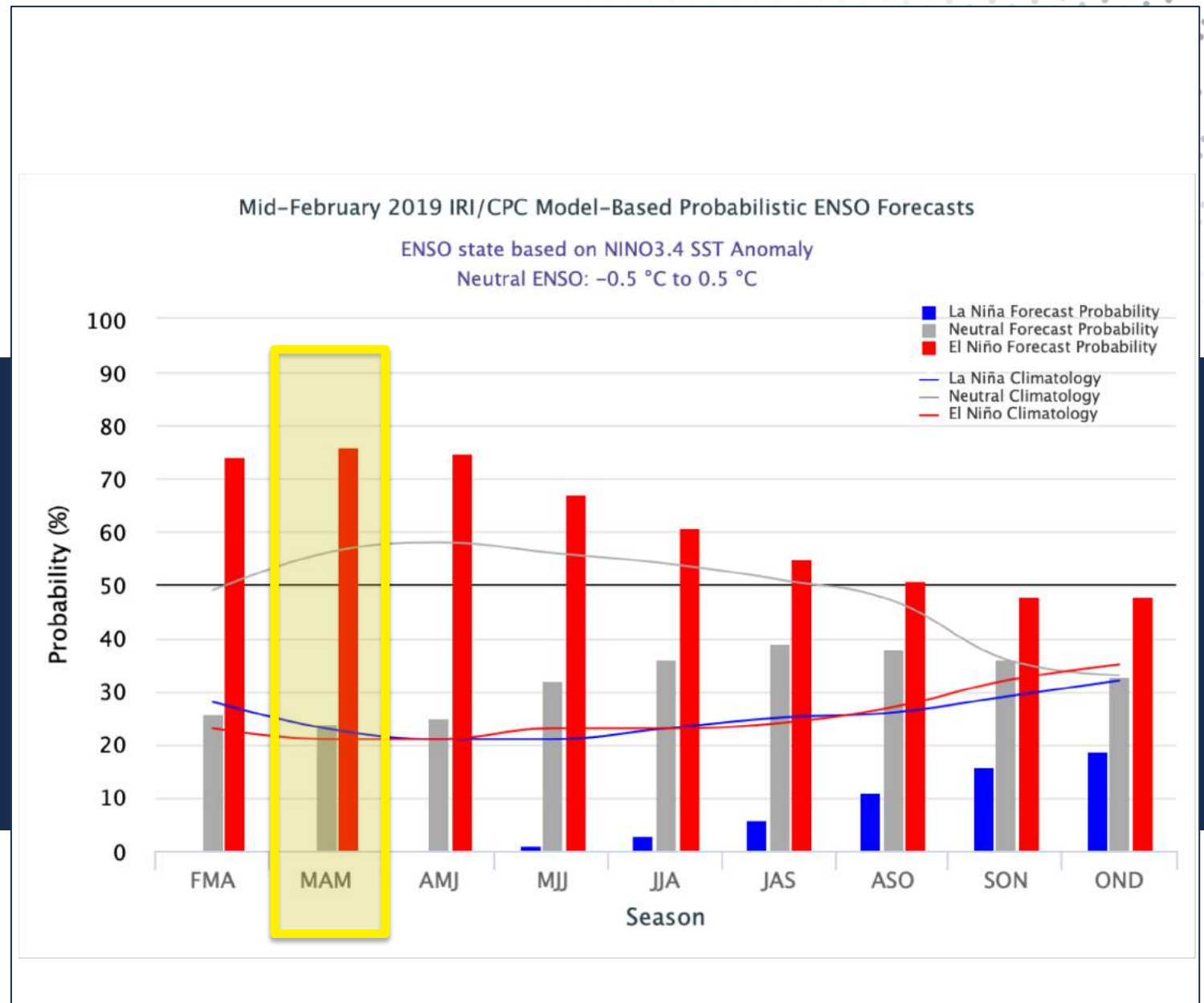
SEVERE WEATHER: EL NINO

Is the phase of ENSO
an indicator of severe
weather potential?



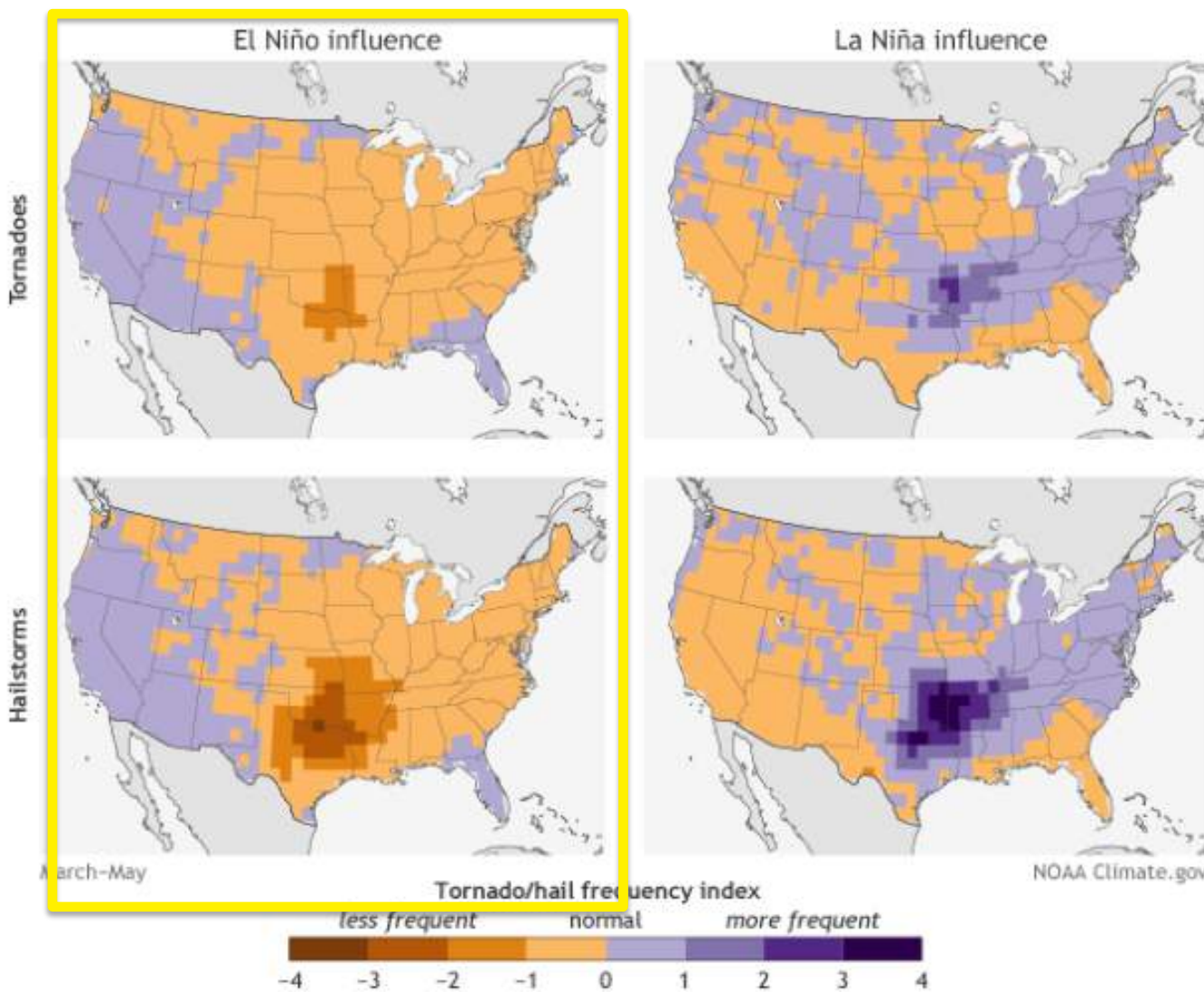
SEVERE WEATHER: EL NINO

Is the phase of ENSO
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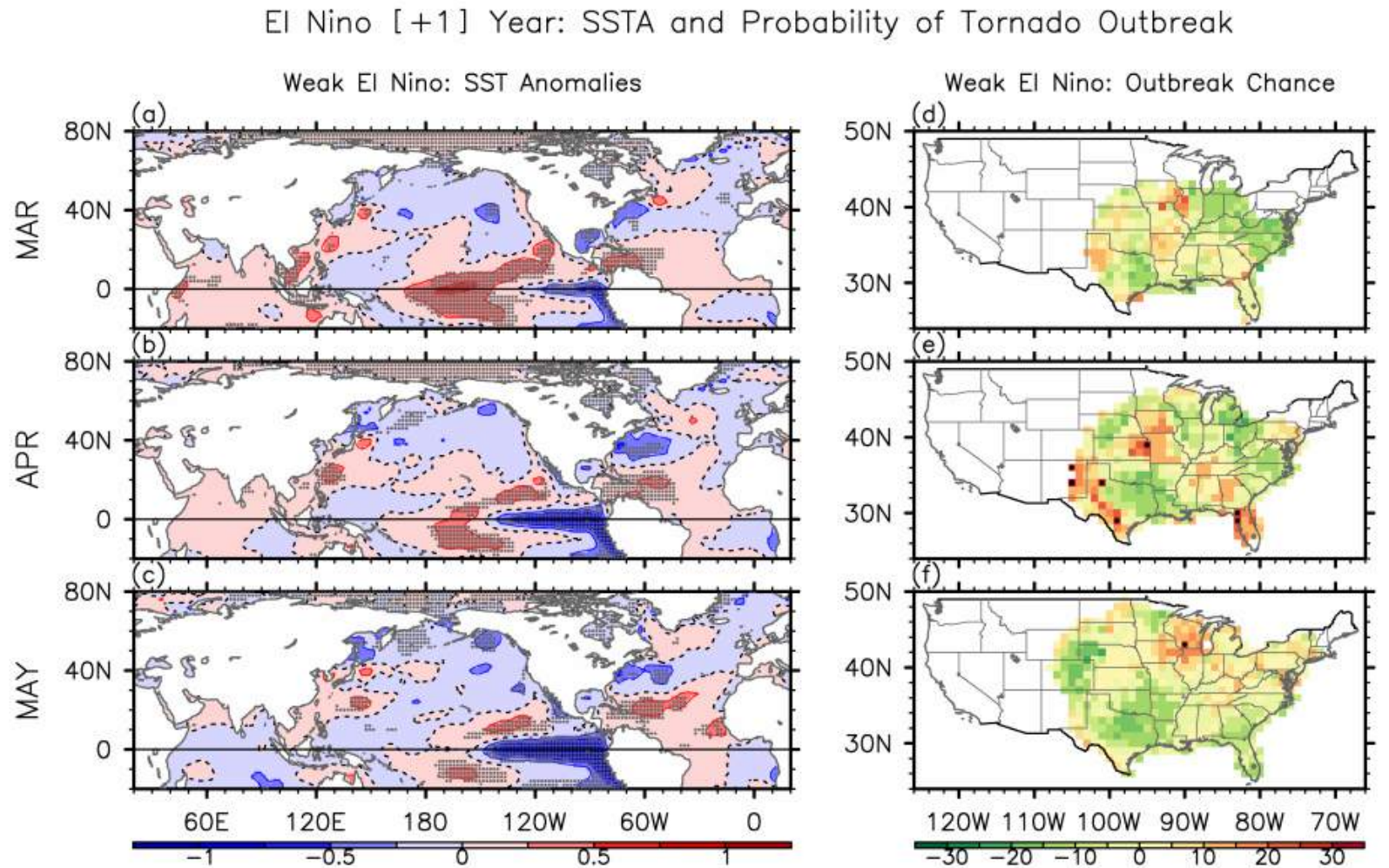
SEVERE WEATHER: EL NINO | TORNADOES AND HAIL

Is the phase of El Nino
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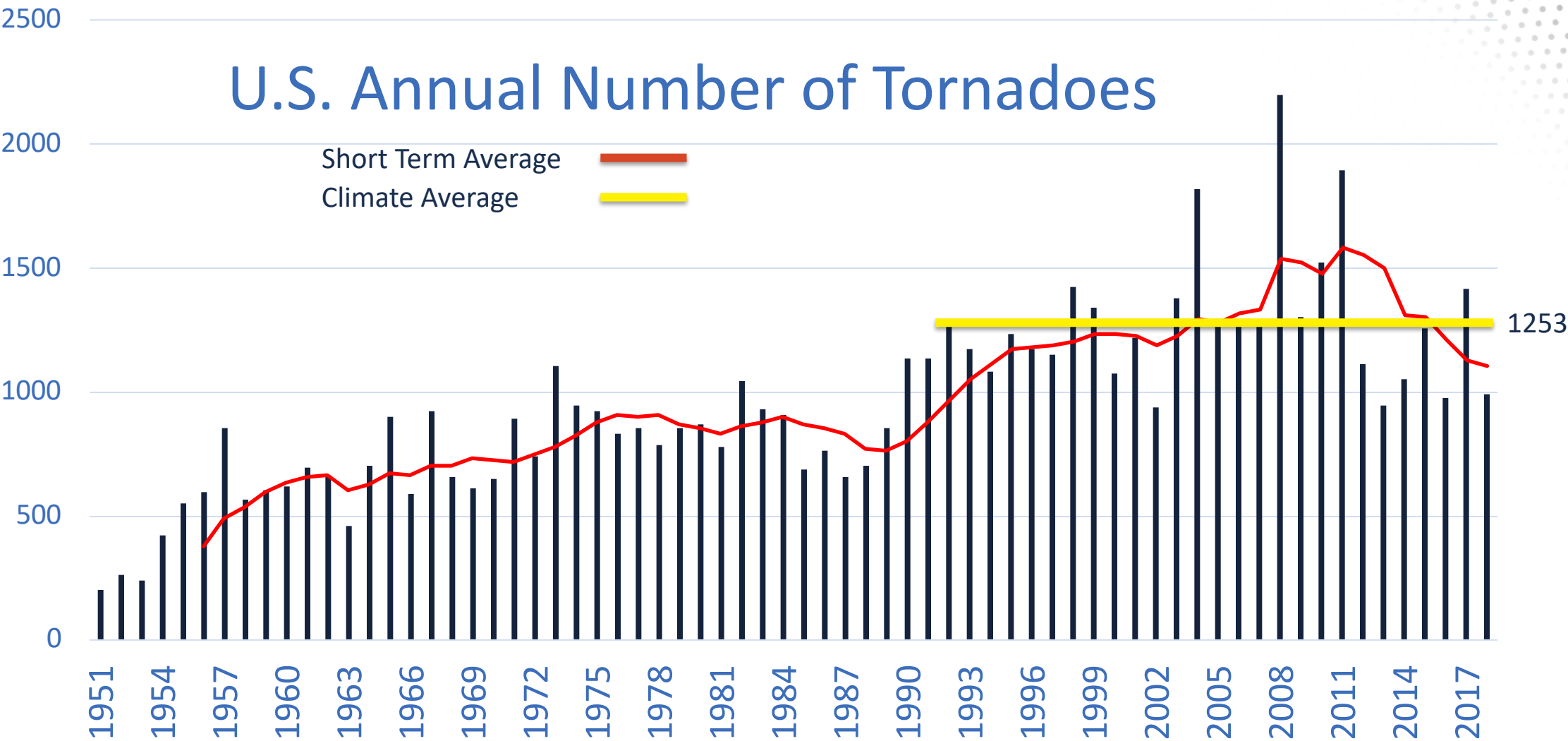


SEVERE WEATHER: EL NINO | TORNADO OUTBREAKS

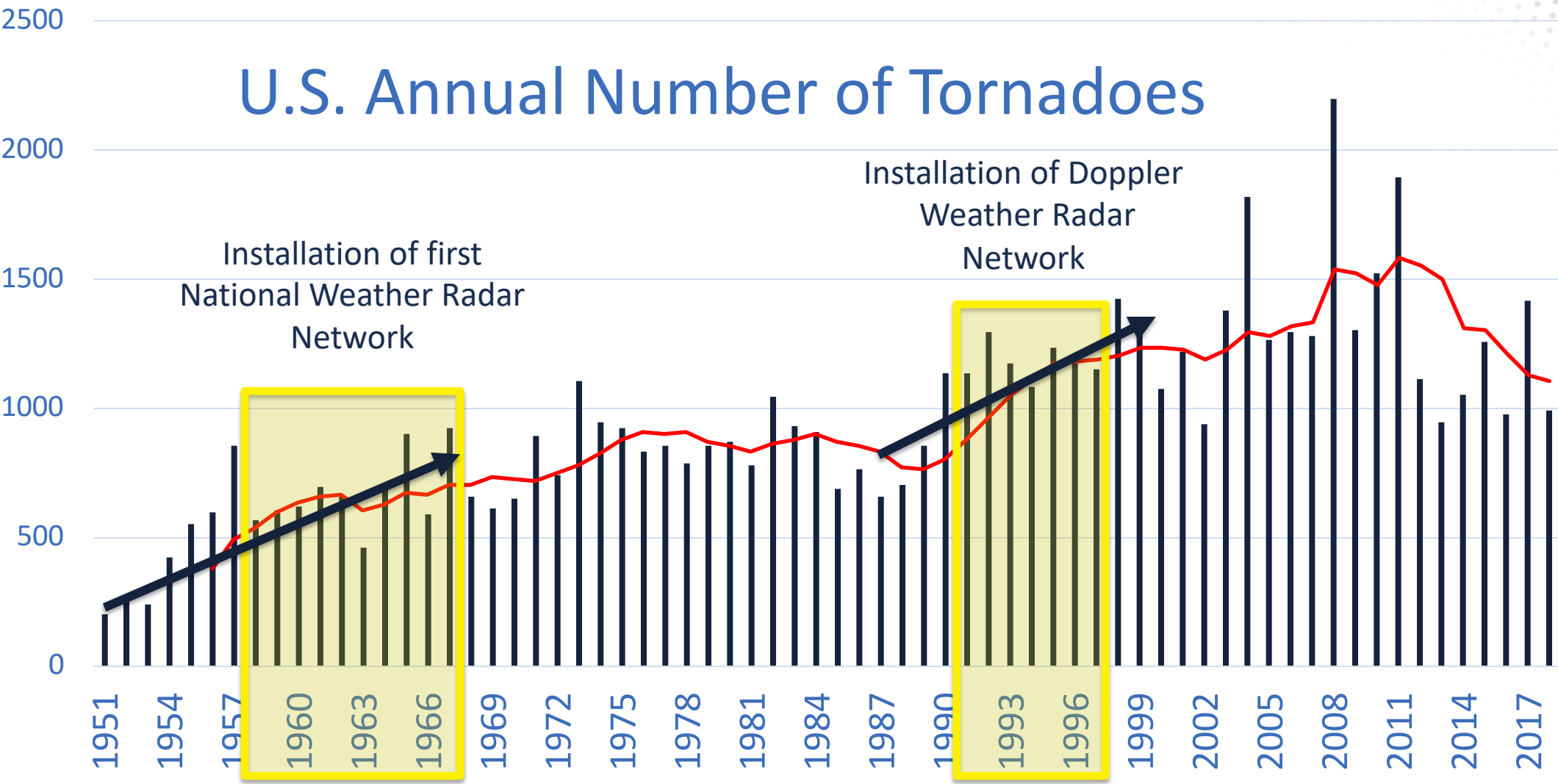
Is the phase of ENSO
an indicator of a
potential tornado
“outbreak”?



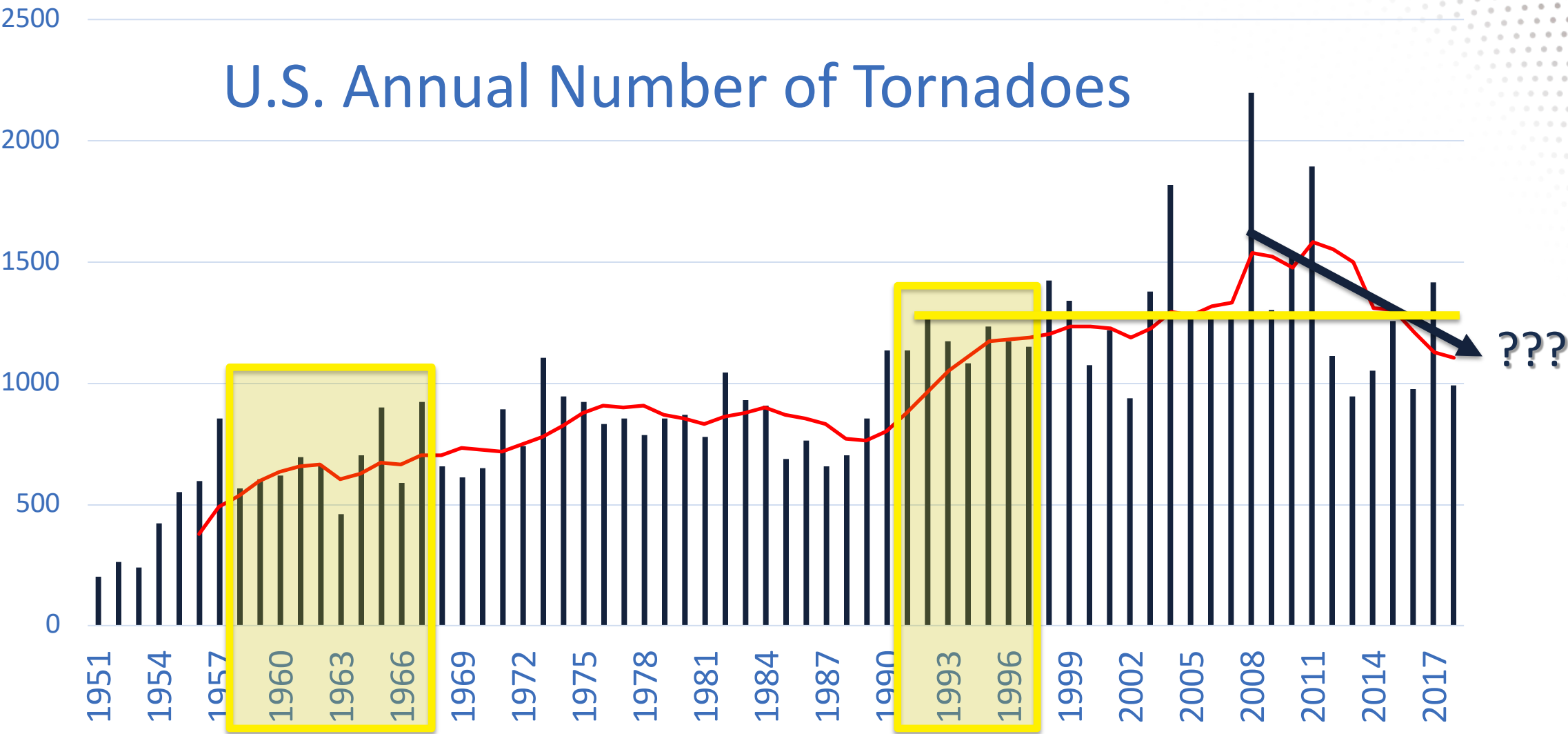
SEVERE WEATHER – TORNADOES AND CLIMATE TRENDS



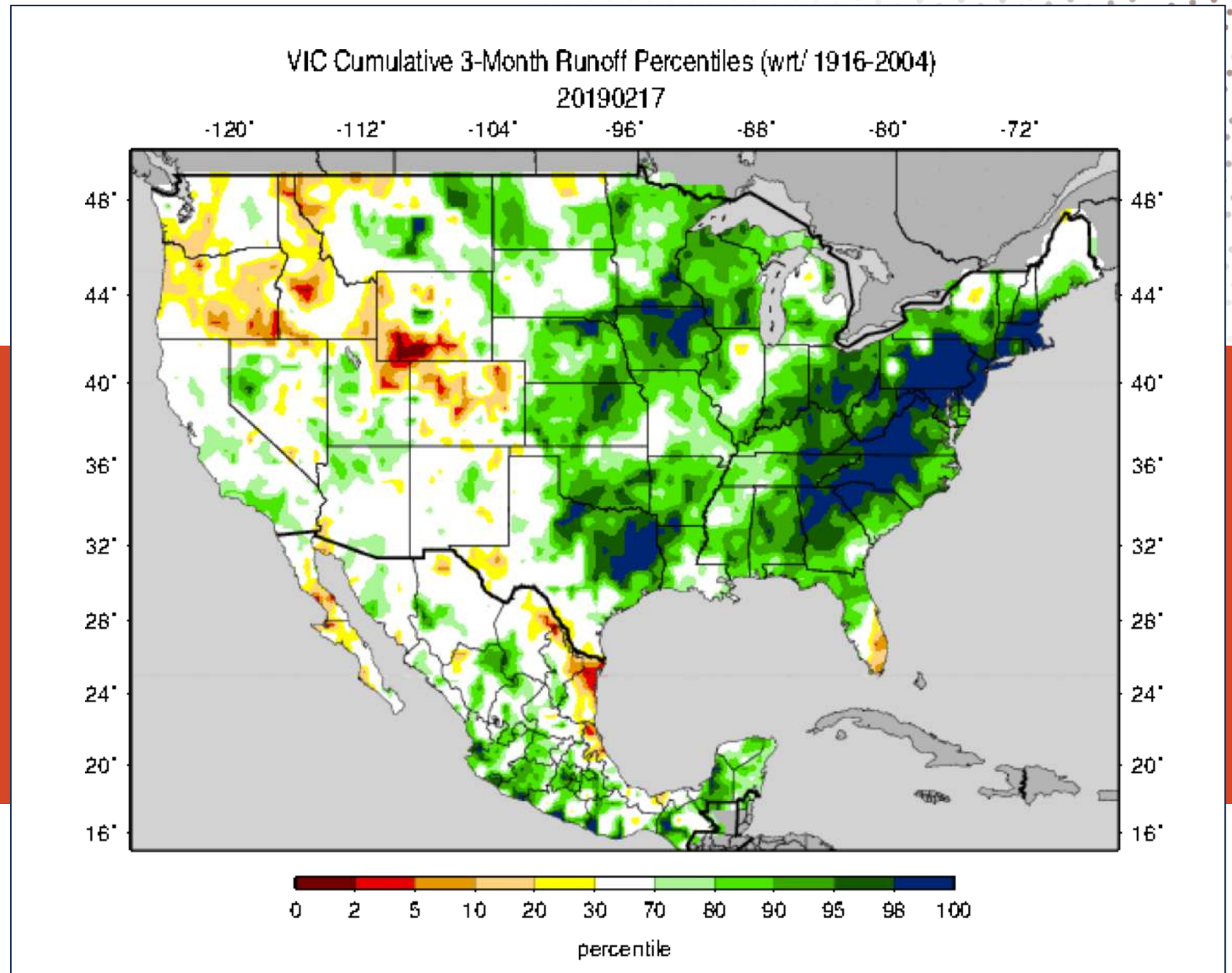
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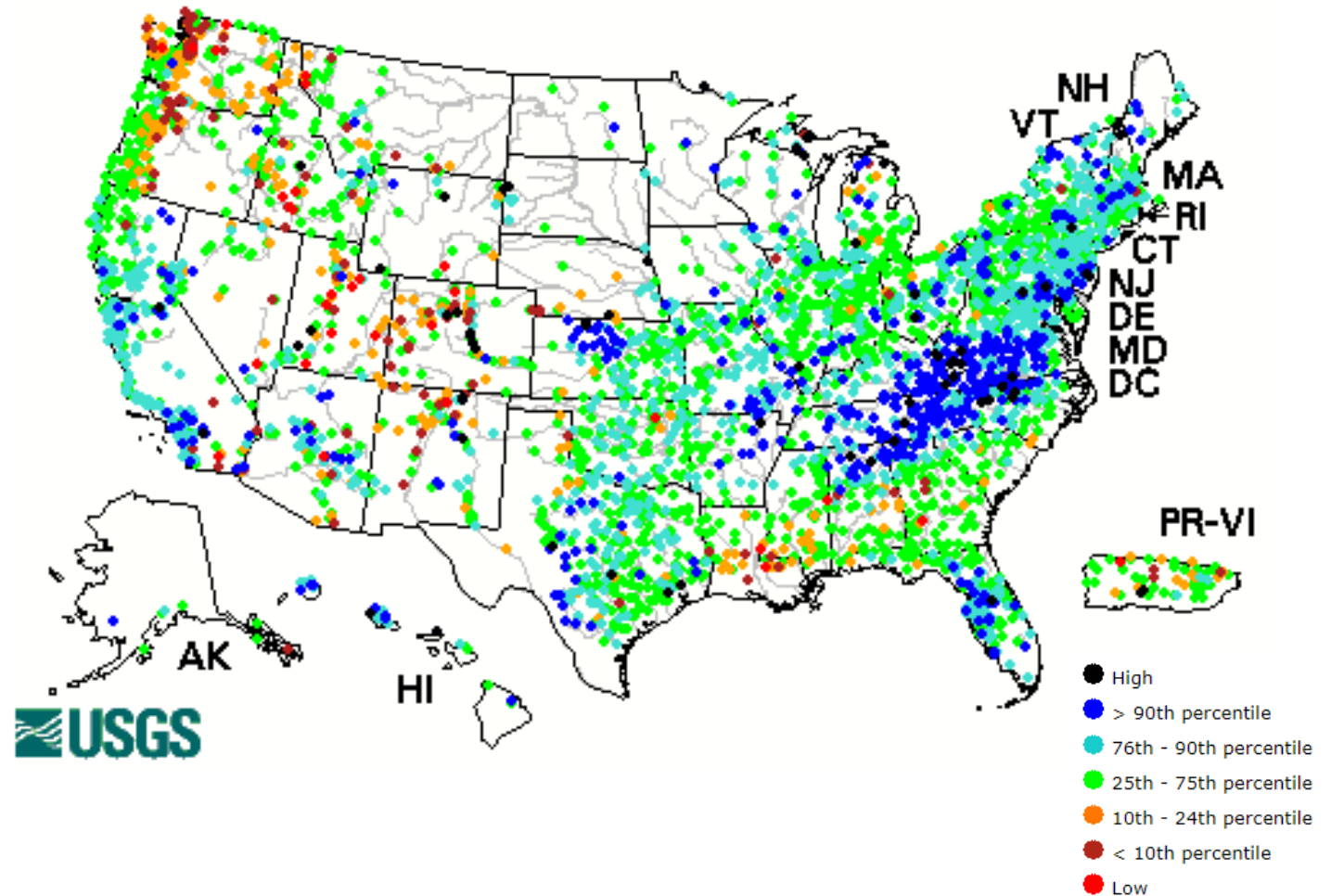
EXCESSIVE RAINFALL FLOODING



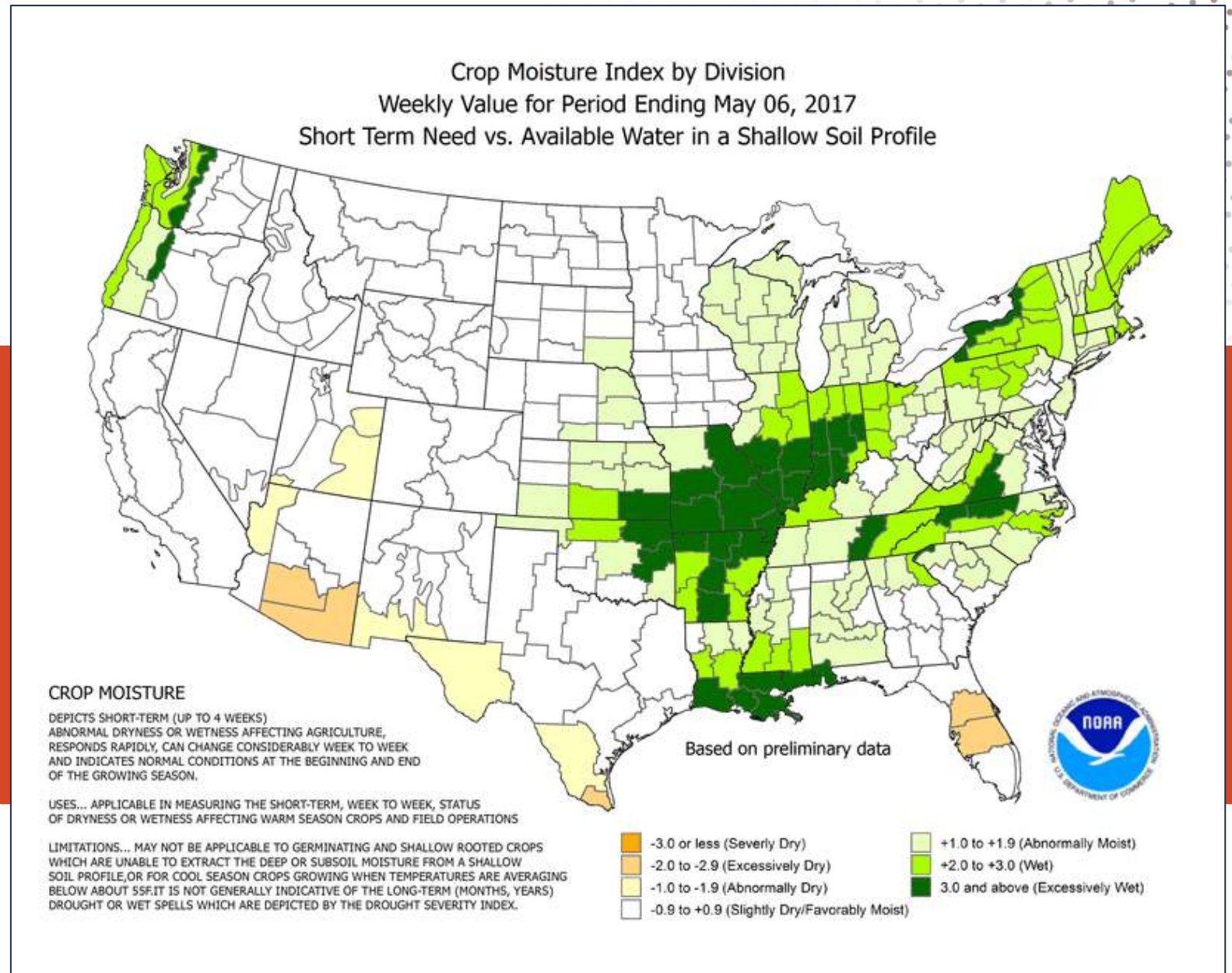
EXCESSIVE RAINFALL FLOODING

Daily Streamflow Conditions

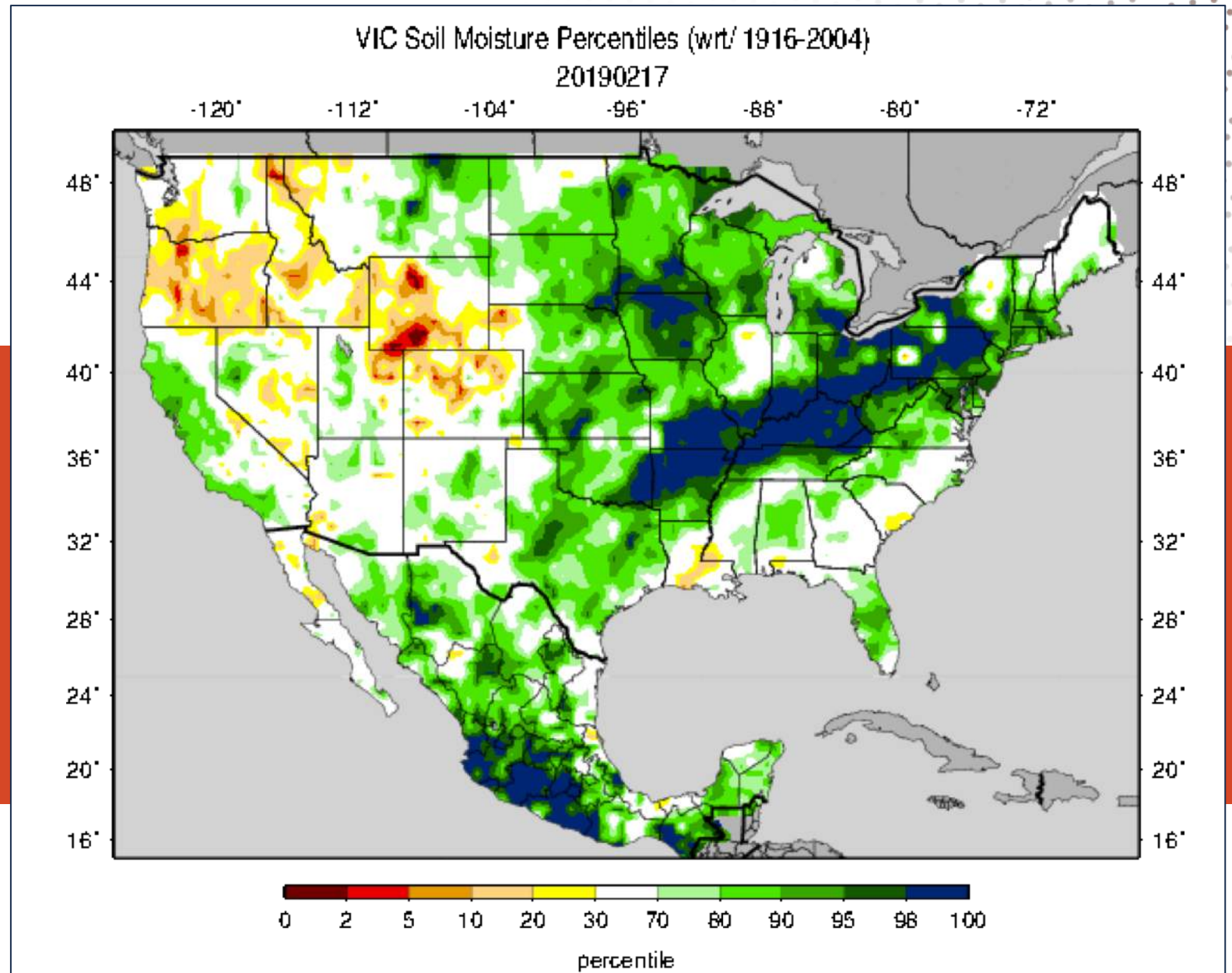
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EXCESSIVE RAINFALL FLOODING



EXCESSIVE RAINFALL FLOODING

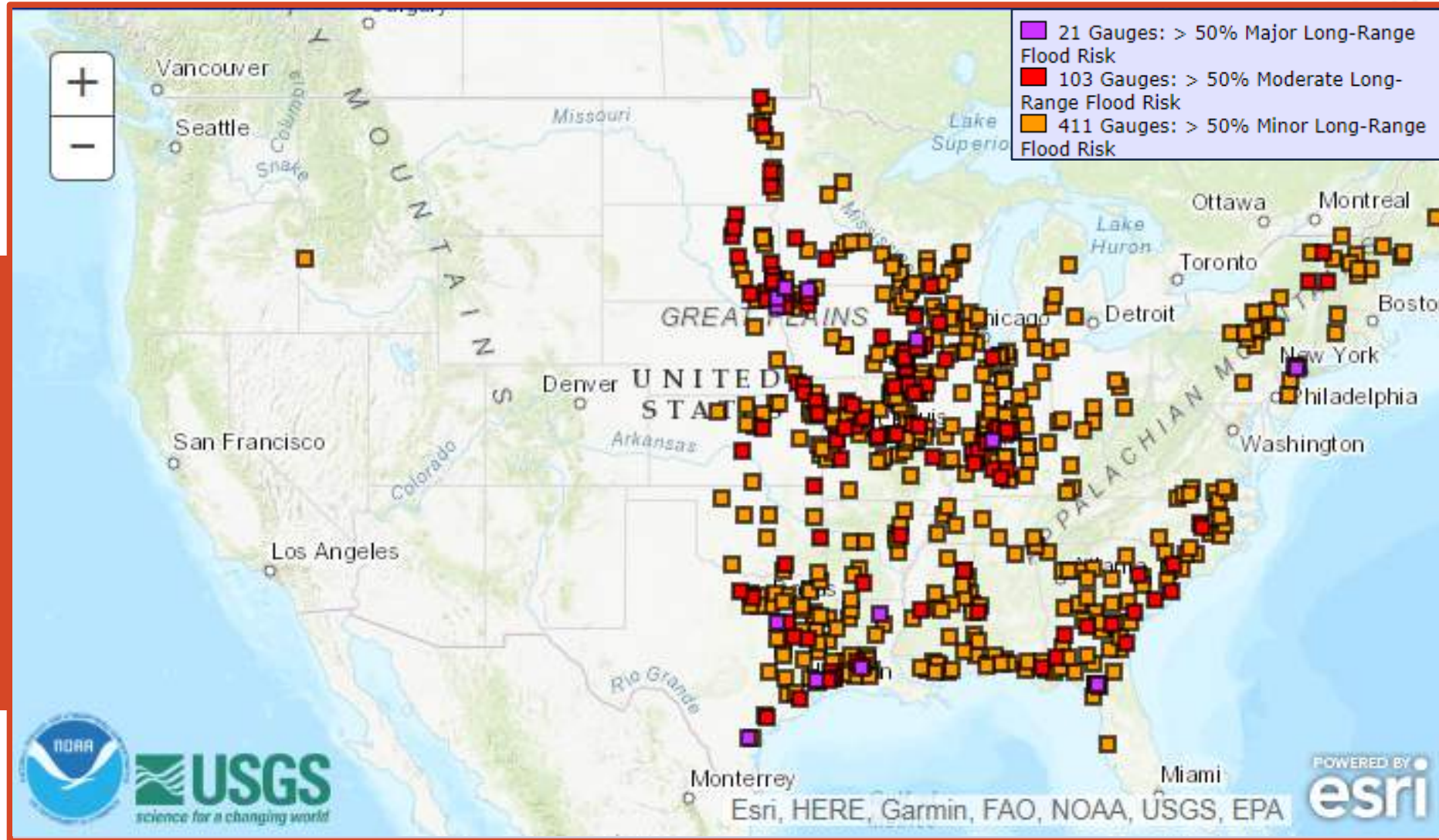


ICE JAMS – FLOODING

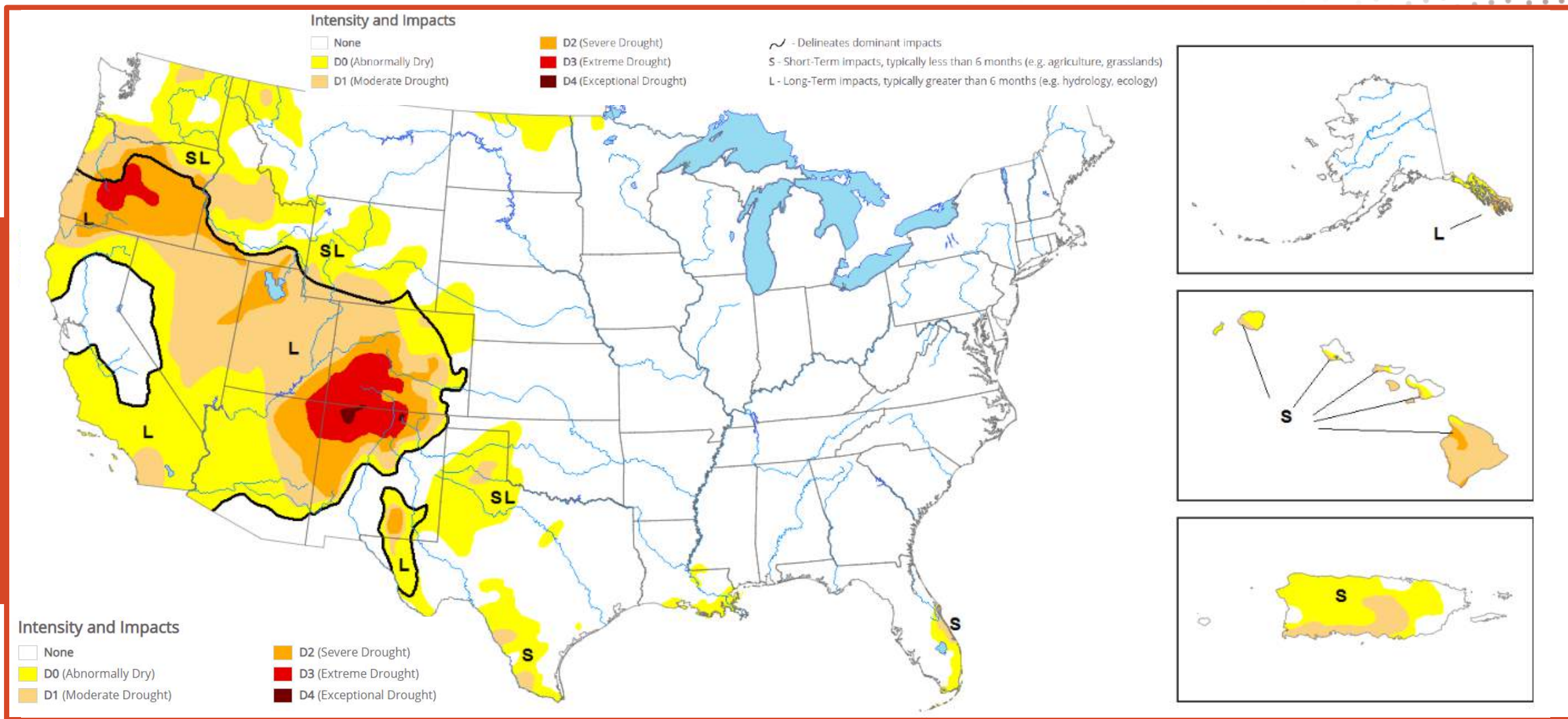


- Most common in Northern Plains, Great Lakes and Northeast
- Broken up ice chunks create a dam that blocks water
- Occur in areas where rivers are frozen with thick ice and temperatures become very mild (40s or higher) for 3-5 days or more
- Elevated threat when heavy rainfall occurs to raise river levels and break up ice
- Elevated threat when a thick snow pack melts quickly to raise river levels

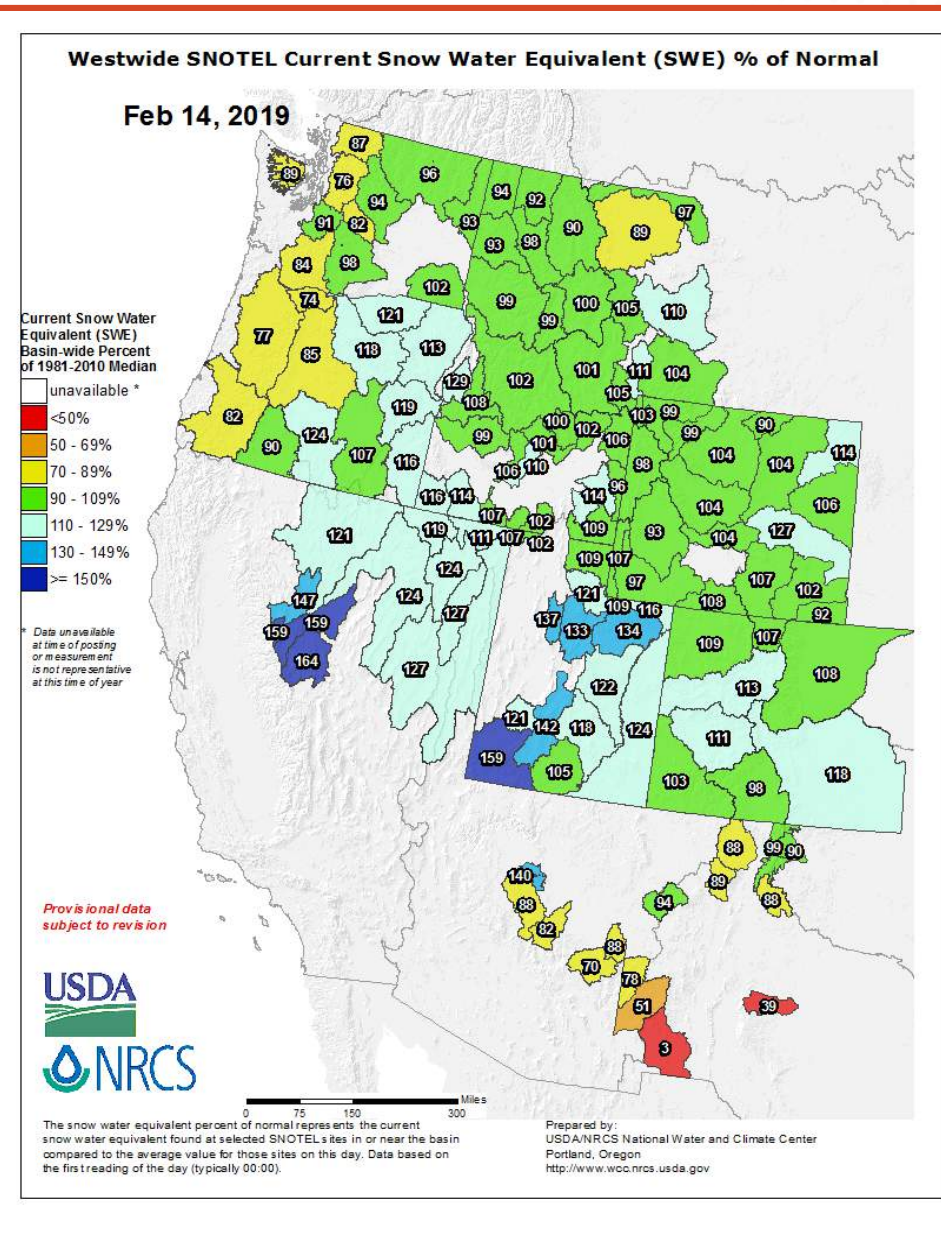
EXCESSIVE RAINFALL – FLOODING



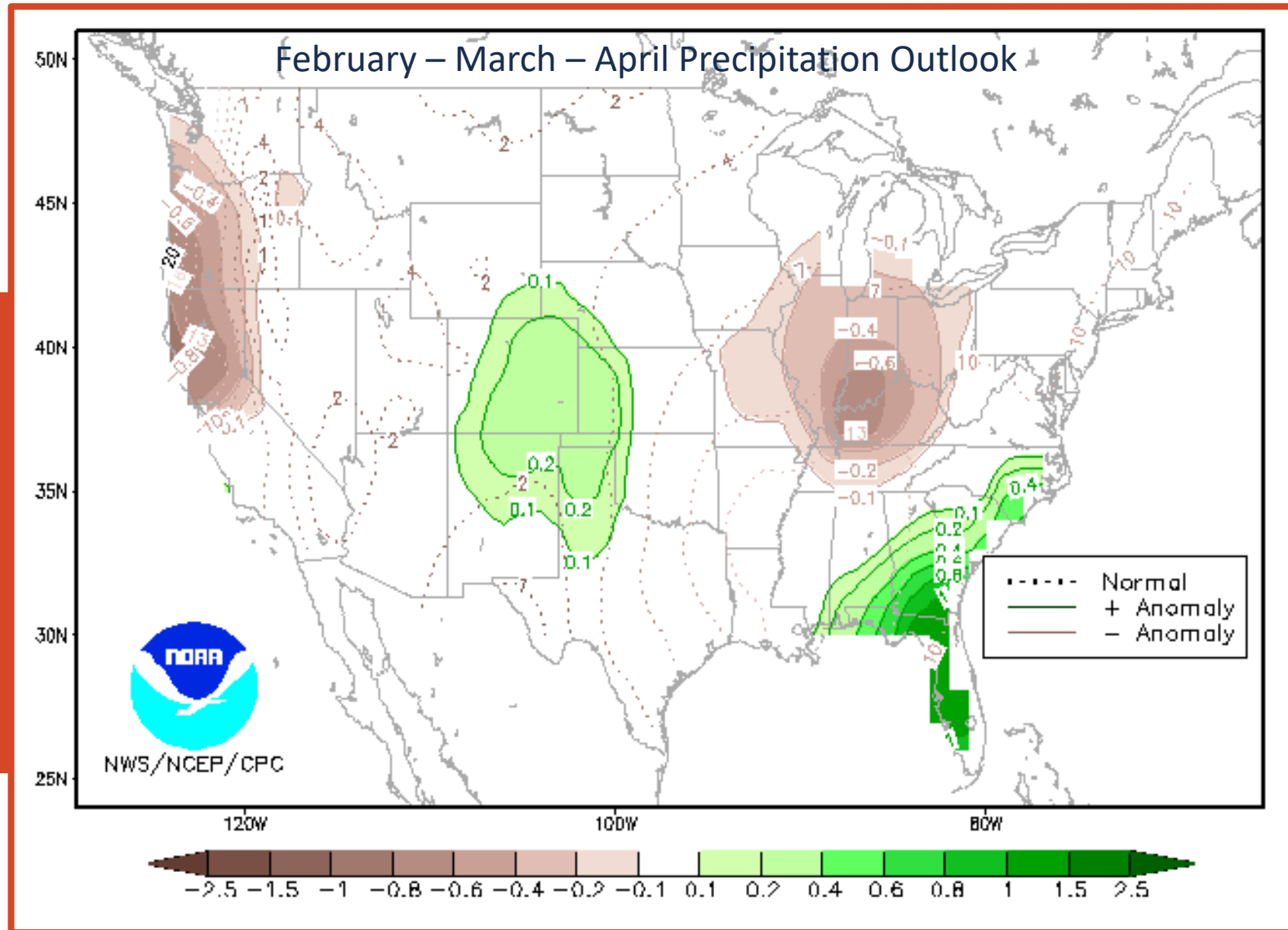
DROUGHT



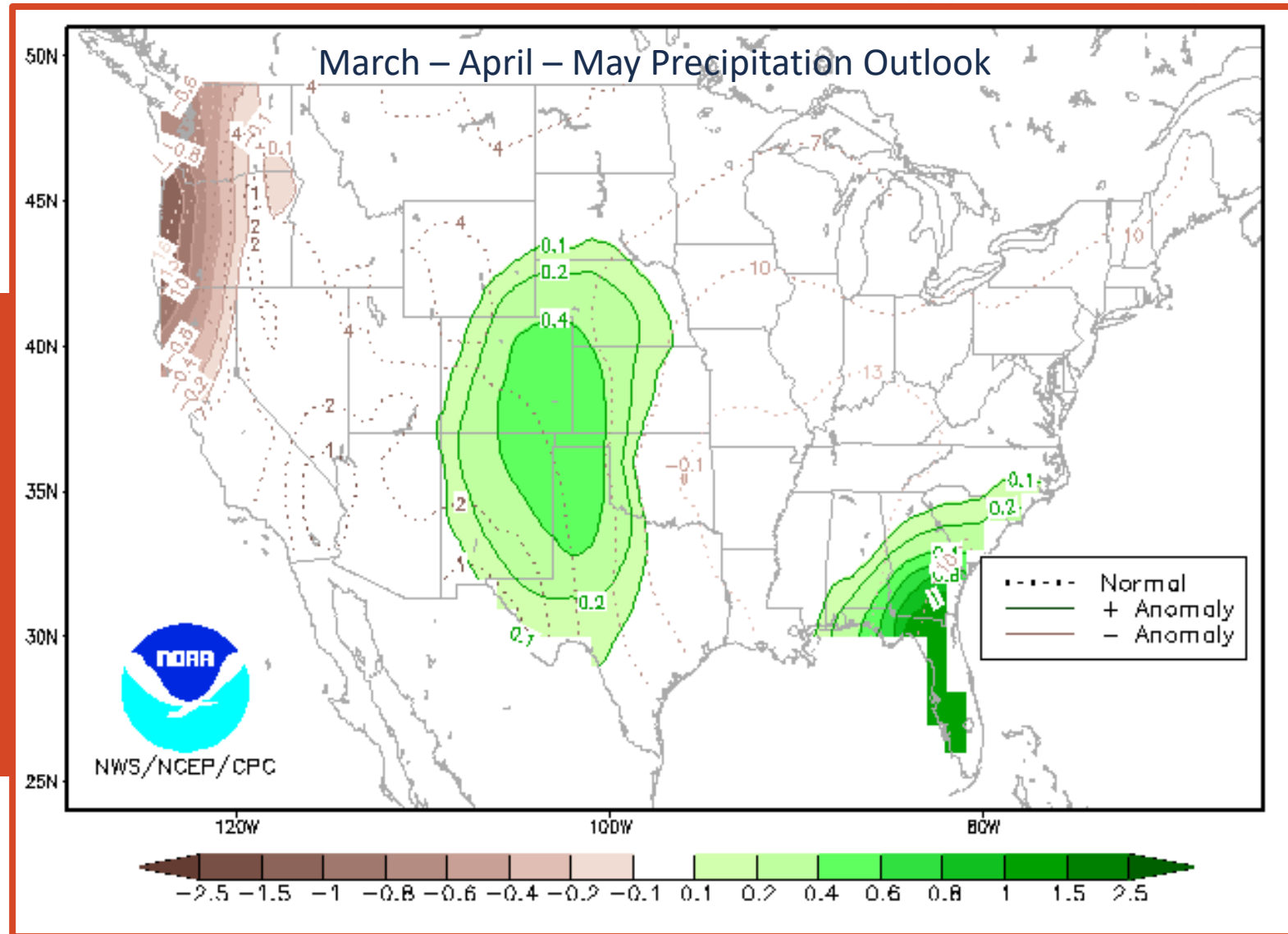
DROUGHT



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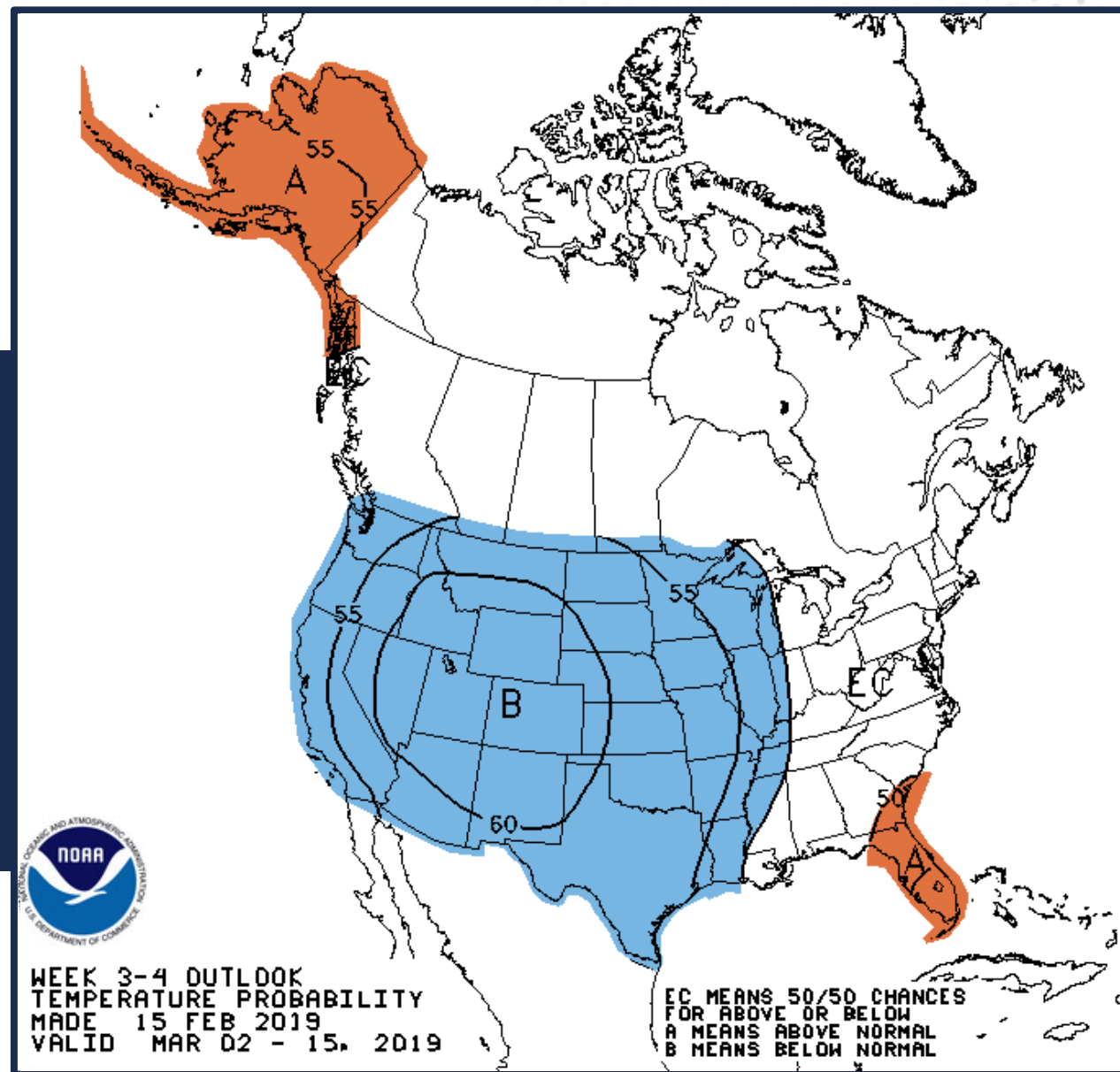


DROUGHT



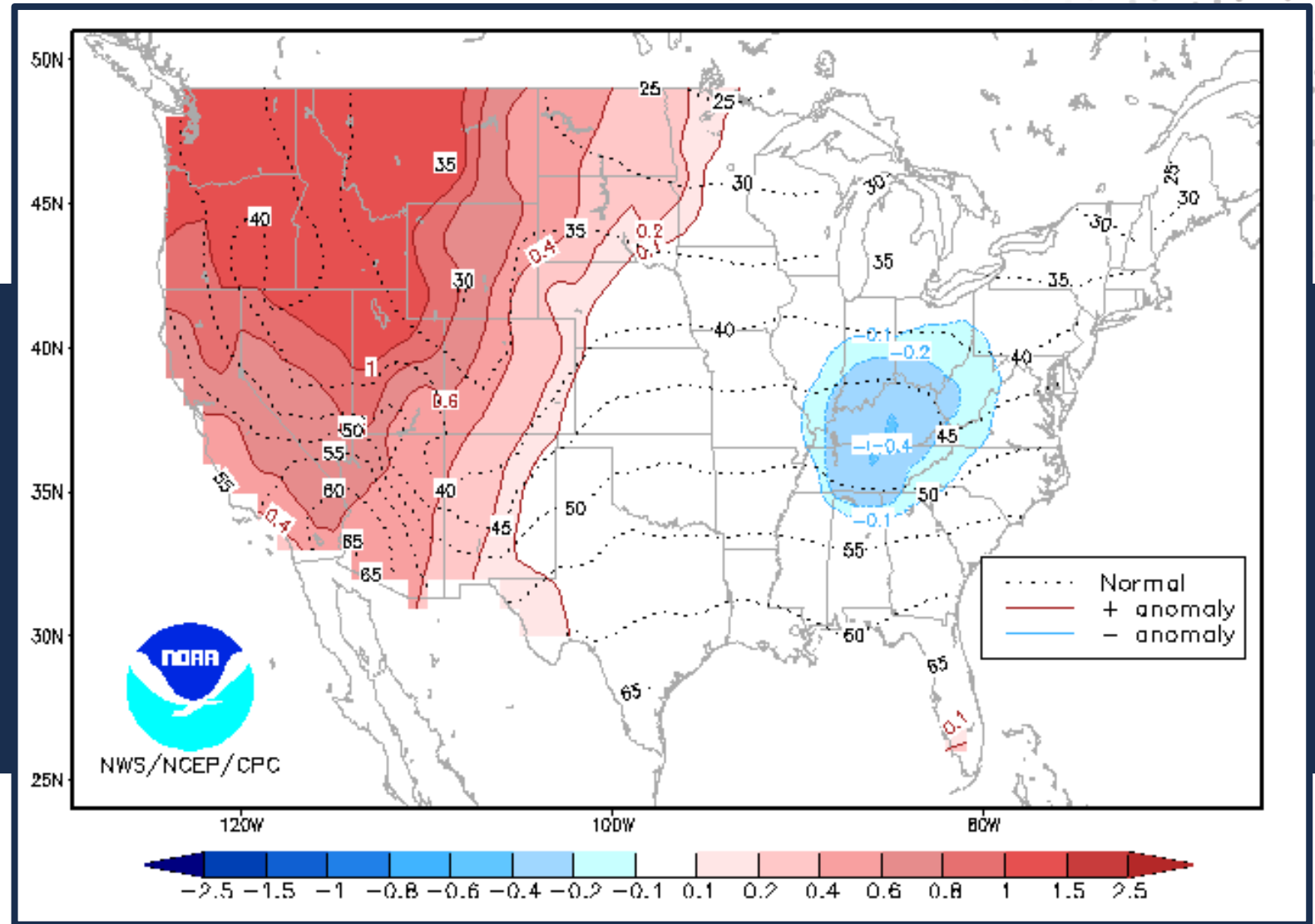
TEMPERATURES

March 2 – 15, 2019



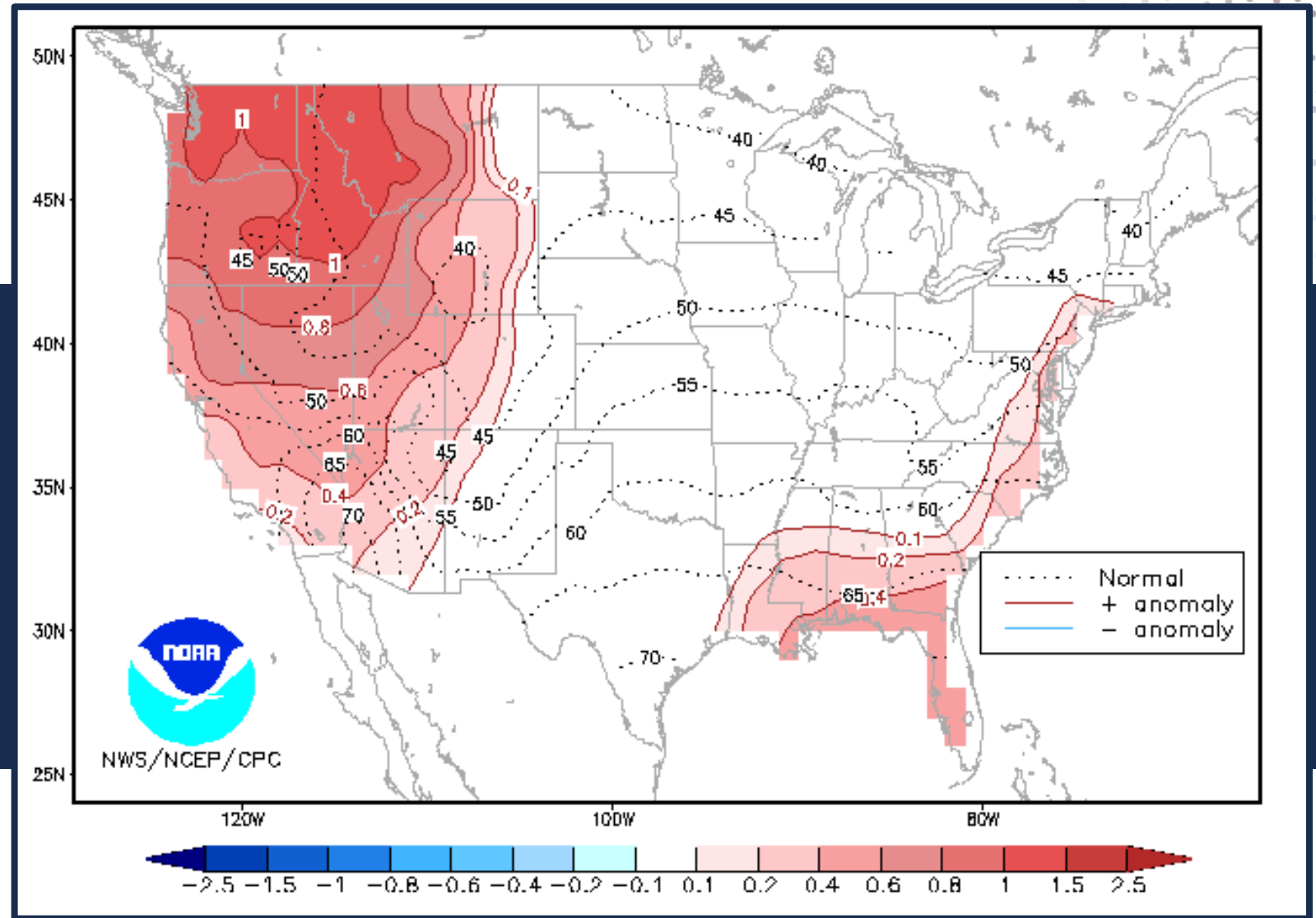
TEMPERATURES

February – March – April Temperature Outlook



TEMPERATURES

March – April – May Temperature Outlook



SPRING SEVERE WEATHER SUMMARY



- Weak El Nino could create conditions for another below normal tornado season in the Plains and Deep South
- Hints at wet/stormy Spring in SE Georgia and Florida
- Saturated ground and rivers at capacity increase risk for Spring river flooding in the East – Early ice jam flooding in Northern Plains during first thaw
- Near term temperature outlooks hint at cool start to March in West but with a higher probability for a warm Spring
- Slightly lower than normal snowpack with higher chances for dry and warm weather in Northwest increase chances for Summer drought



QUESTIONS?

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