

Pros and Cons for Each of the COD Storm Chasing Trips

Which Trip Should I Choose?



Common Questions Prior to Our Trips

1) *Where will we be chasing?*

- Unless you are asking us a few days prior to the start of the trip, ***we do not know!*** As you will see in the following slides, your trip dates strongly influence the ***typical regions*** you will be chasing in; however, not every year ends up being a “typical” storm chasing season!

2) *Will I see a tornado on my trip?*

- ***There is never any guarantee you will see a tornado on your trip!*** Trip dates are selected to maximize the chances of seeing tornadoes and severe thunderstorms, but there are never any guarantees that a tornado will be observed. Even if there are tornadoes, they could be rain-wrapped, overnight, far away from any roads with a view, or we may have been unable to get to the storm producing the tornado. ***Storm chasing with the singular goal of observing a tornado will very often end in disappointment!***

3) *Which is the best trip to go on?*

- ***This largely depends on your personal preferences!*** The following slides will give you pros and cons for each trip so you can decide which is the best fit for your storm chasing goals. Again, these pros/cons are what is ***typically*** expected... some years can end up very different from expectations based on long-term climatology of tornadoes and severe thunderstorms!

Warning! Climate and Weather are Different!

- The following information is based on climate data, which tells us the average/typical conditions. You can think of climate as what you expect, while weather is what you get. ***You do not always get what you expect on a storm chasing trip!***
- Since our trip dates are set almost a year in advance, and enrollment is many months prior to a trip, understand that your decision on which trip is best for you is being based on climate (what you expect).
- Typical pros and cons are given for each trip in the following slides; ***your specific trip may differ from what is expected*** depending on the weather pattern we ultimately get.

Trip 1 (Late April/Early May) Pros and Cons

Pros

1) The highest probability of significant tornadoes (F/EF-2+), however, bias in how tornadoes are rated may influence these probabilities.

2) More focused geographic areas for storm chasing; which means less driving and less chance of missing a chasing setup because it is too far away.

3) This trip is during the early portion of “chase season”, so there are typically less storm chasers out and less “chaser convergence”.

4) The combination of hotel options where chasing typically occurs, and sunset times this time of year generally allow the avoidance of late nights (if you do not do well staying up late).

5) This trip is early enough in the year to typically avoid oppressive heat while waiting for storms to develop or during travel and sightseeing days.

Cons

1) A stronger jet stream this time of year often leads to faster storm motions that increase the difficulty of storm chasing and limit time outside of the vans for photo opportunities.

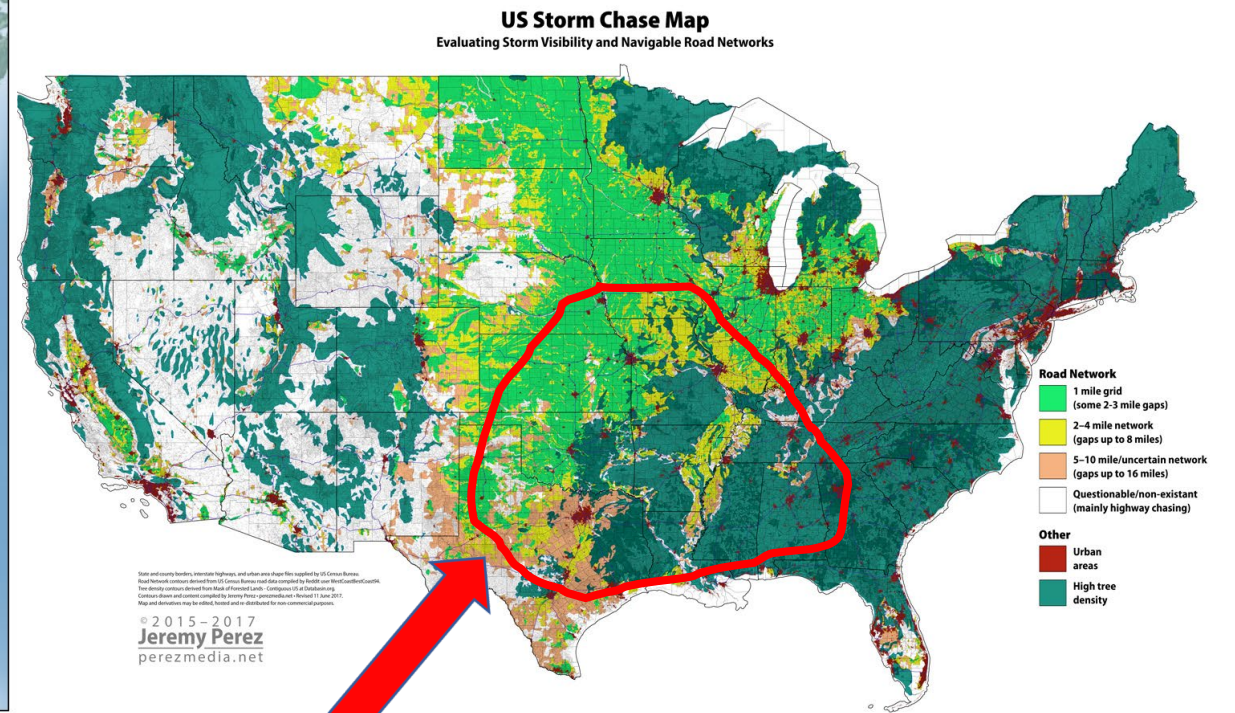
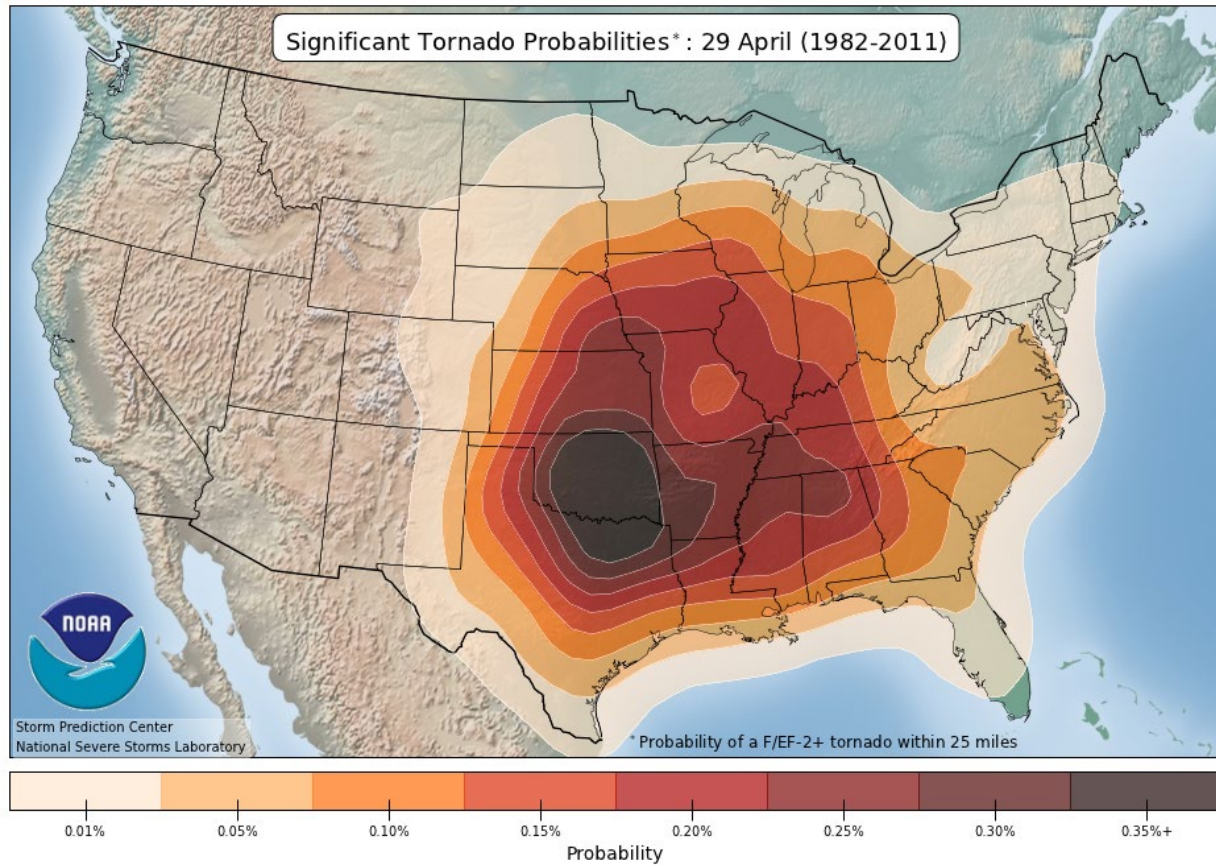
2) Some regions expected to have severe thunderstorms and tornadoes this time of year have combinations of poor visibility and poor road networks that make chasing very difficult.

3) While known for being a time of year that big tornado outbreaks occur, activity during this period is typically less consistent than later in the storm chase season.

4) Earlier sunset times provide less hours of daylight for storm chasing to occur. As a general rule, we will not be chasing after dark unless it is to see a lightning display from a distance.

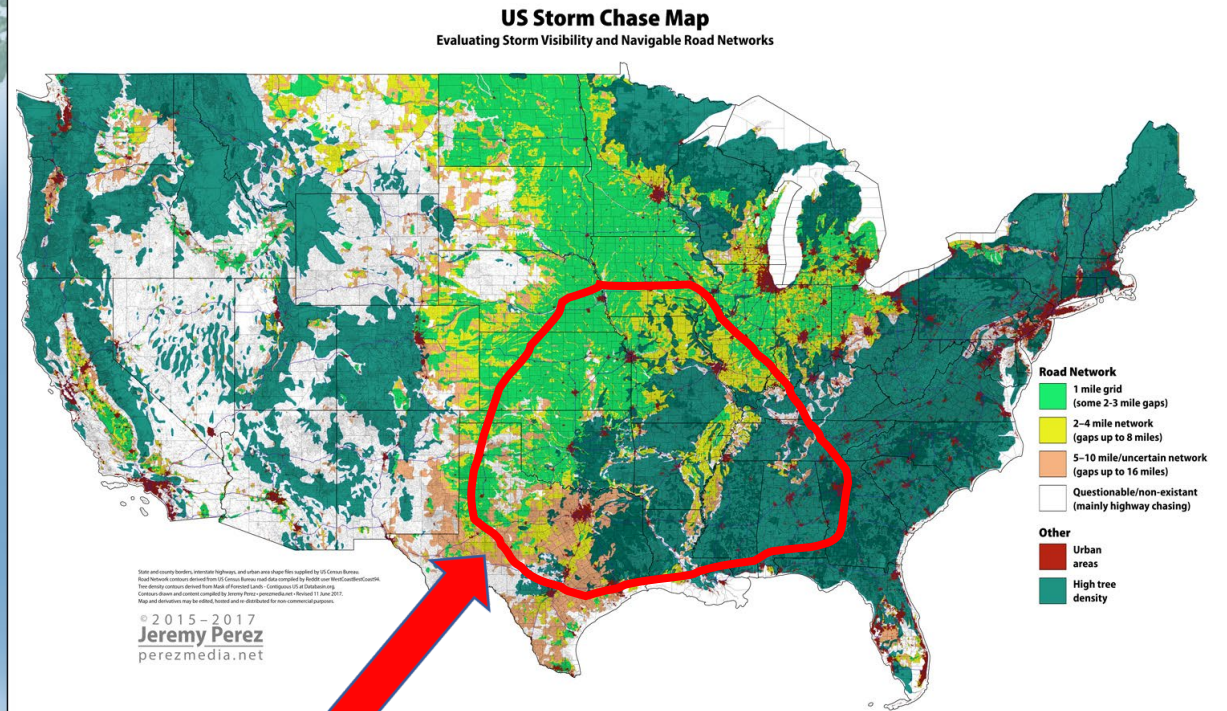
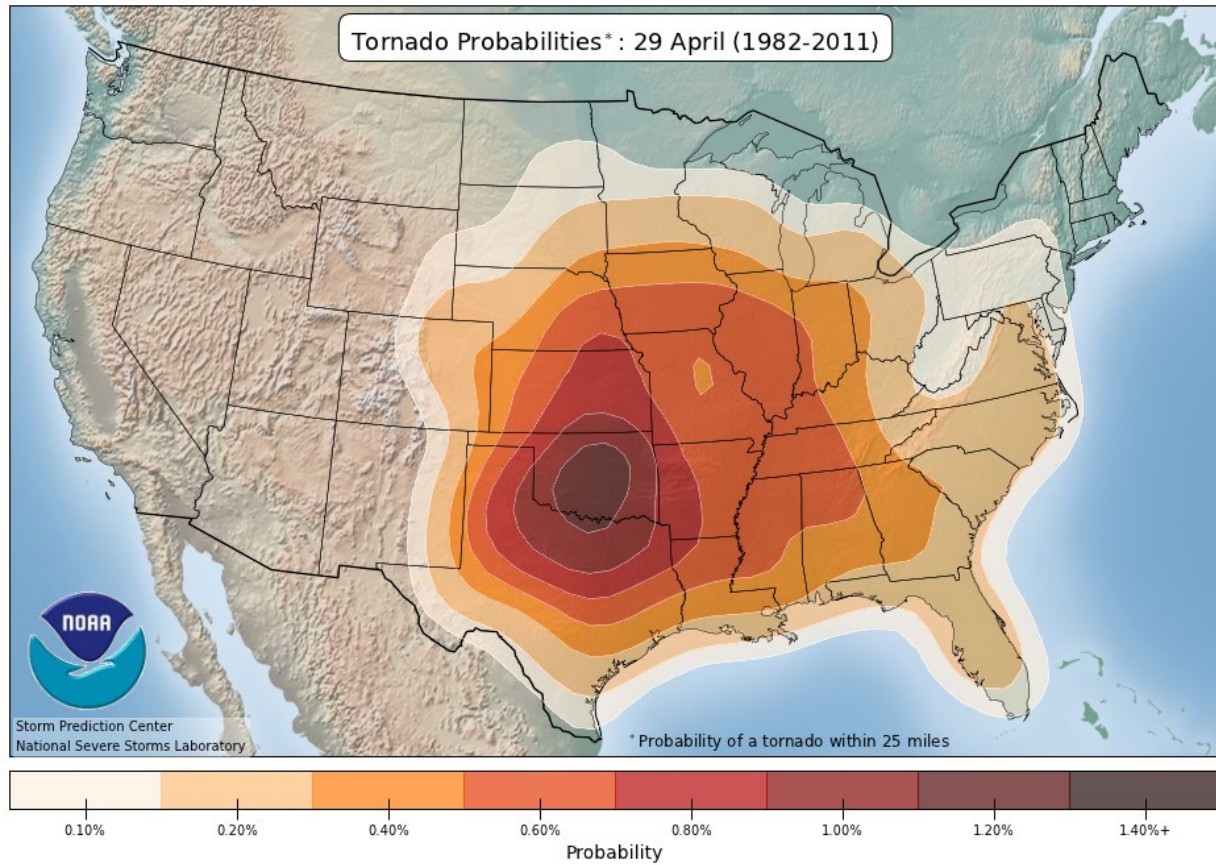
5) Occasionally, crashing cold fronts and troughing in the eastern U.S. can bring long duration cold over much of the country, limiting any chasing opportunities.

Trip 1 (Late April/Early May) Significant Tornado Probabilities



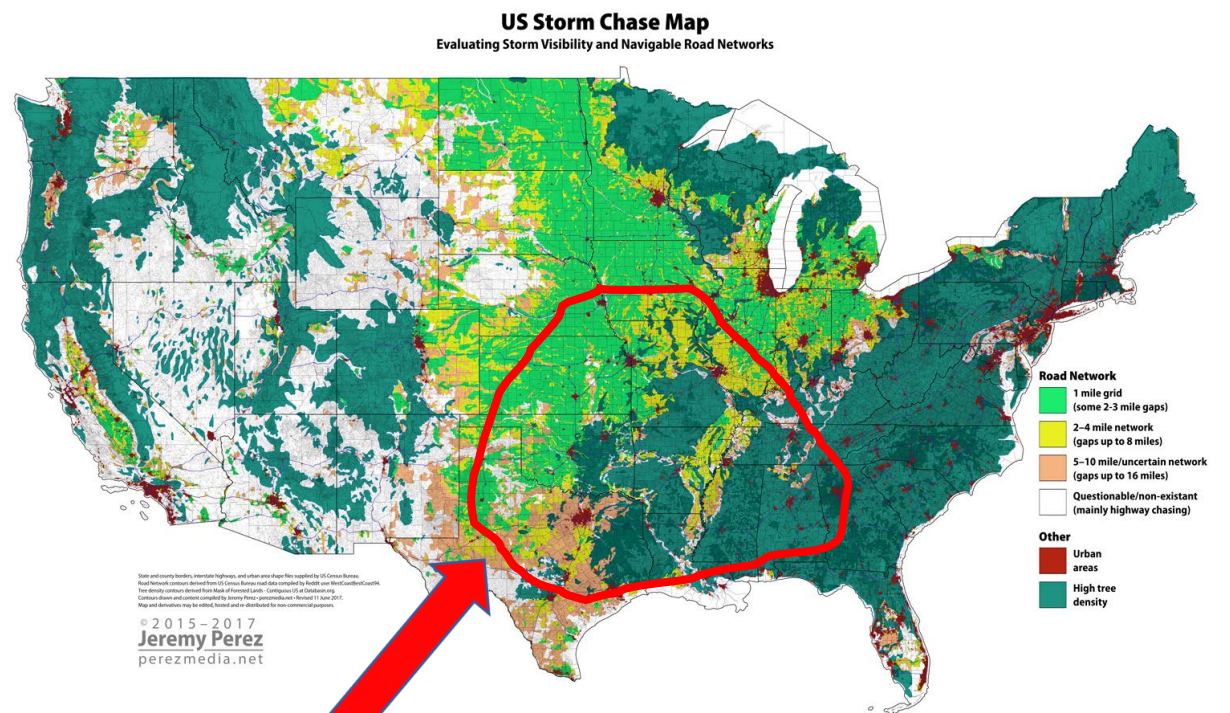
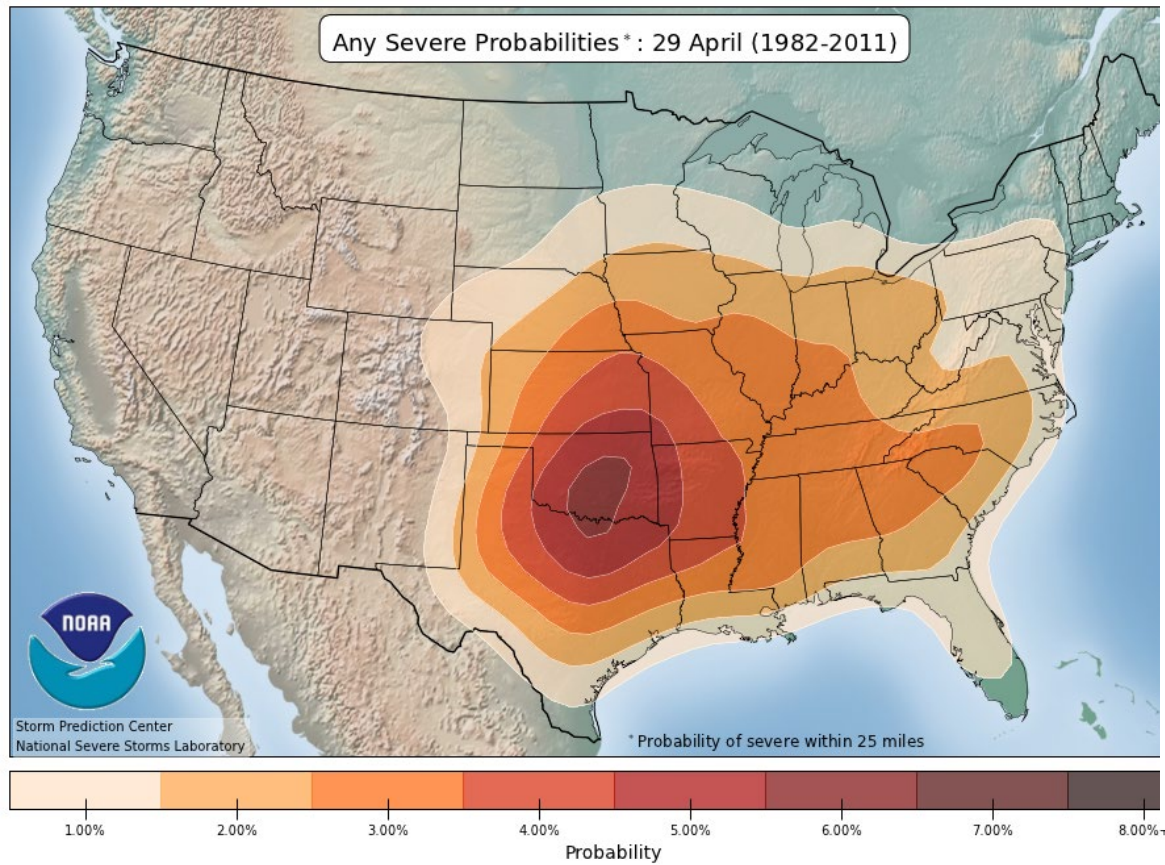
* *Expected region for severe weather setups you may chase*

Trip 1 (Late April/Early May) Tornado Probabilities



* *Expected region for severe weather setups you may chase*

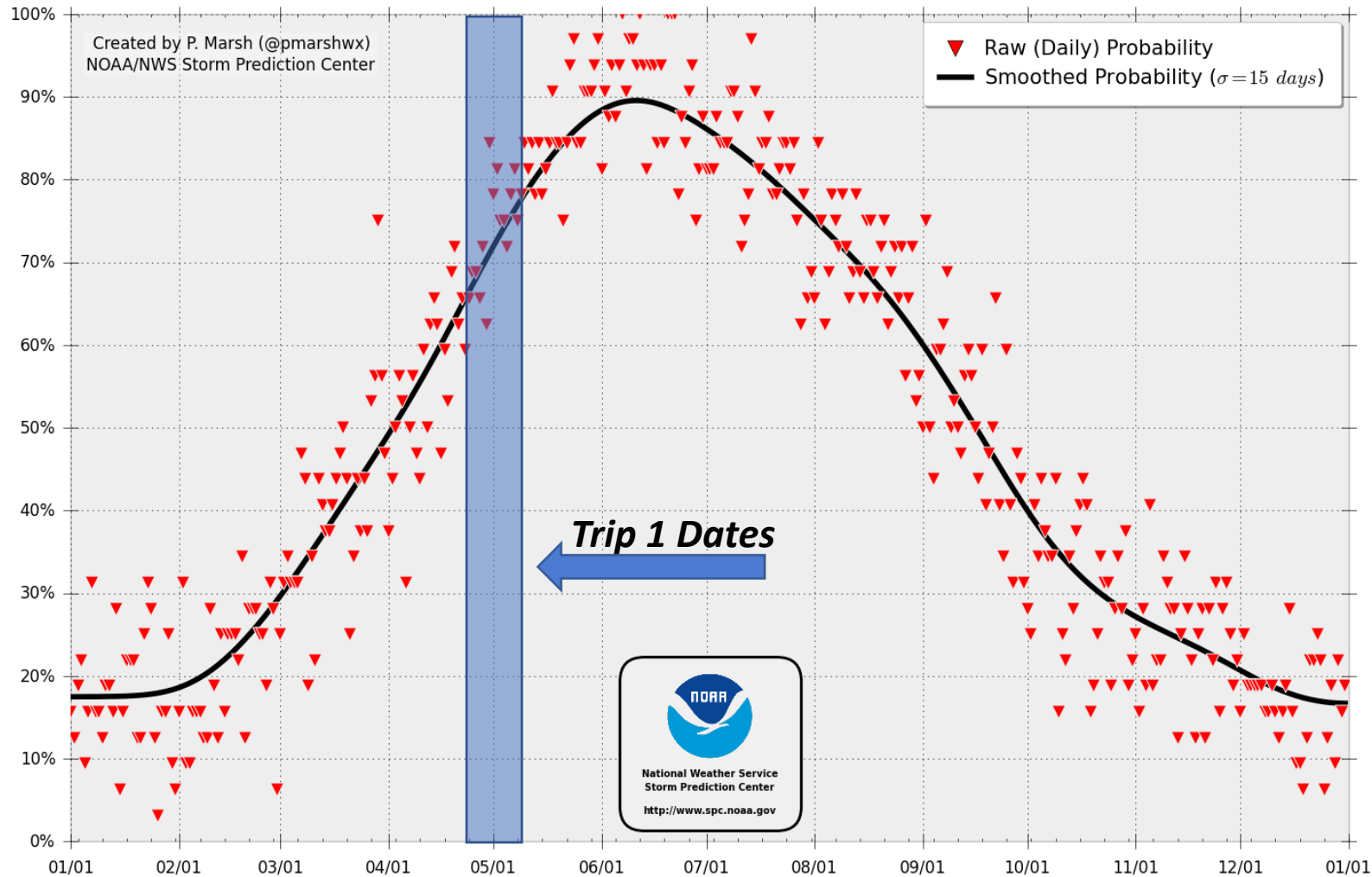
Trip 1 (Late April/Early May) Severe Probabilities



* *Expected region for severe weather setups you may chase*

Trip 1 (Late April/Early May) Daily Tornado Probabilities

Daily Probability of 1+ Tornadoes in the United States
Derived From 1980-2011



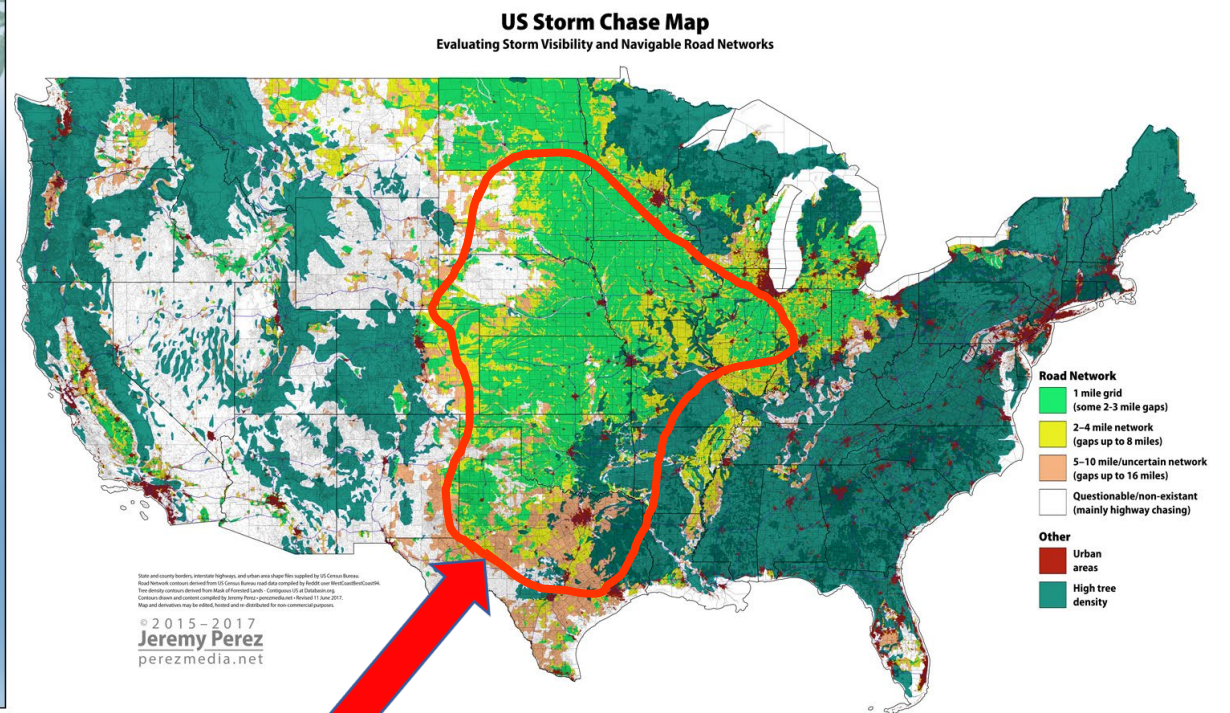
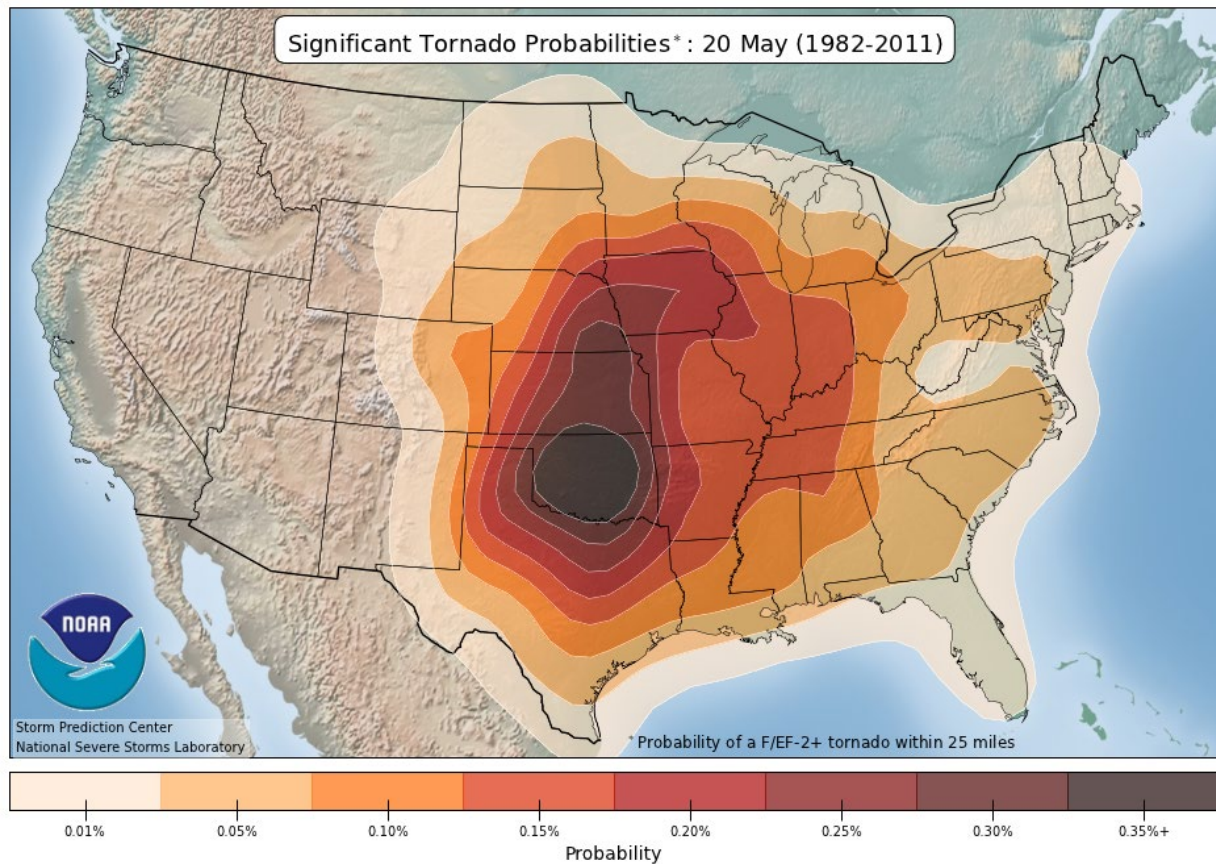
Some Notable Tornadoes During Late April/Early May

- April 27th, 2011 AL/GA/TN/MS (11 EF4s)
- April 27th, 2011 Alabama/Mississippi (4 EF5s)
- May 3rd, 1999 Bridge Creek/Moore (EF5)
- May 4th, 2003 Kansas (4 F4s)
- May 4th, 2007 Greensburg, KS (EF5)
- May 5th, 1960 Prague, OK (F5)
- May 5th, 1964 Bradshaw, NE (F5)
- May 6th, 1973 Valley Mills, TX (F5)
- May 9th, 2016 Katie, OK (EF4)

Trip 2 (Mid May/Late May) Pros and Cons

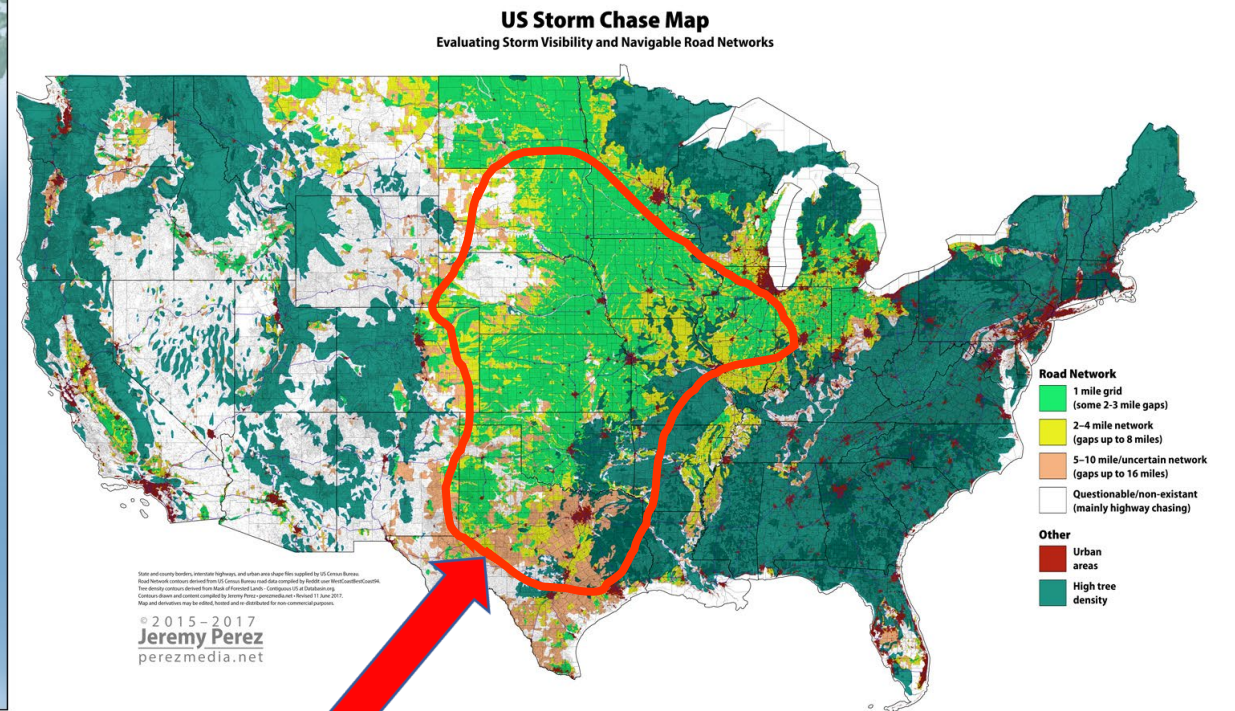
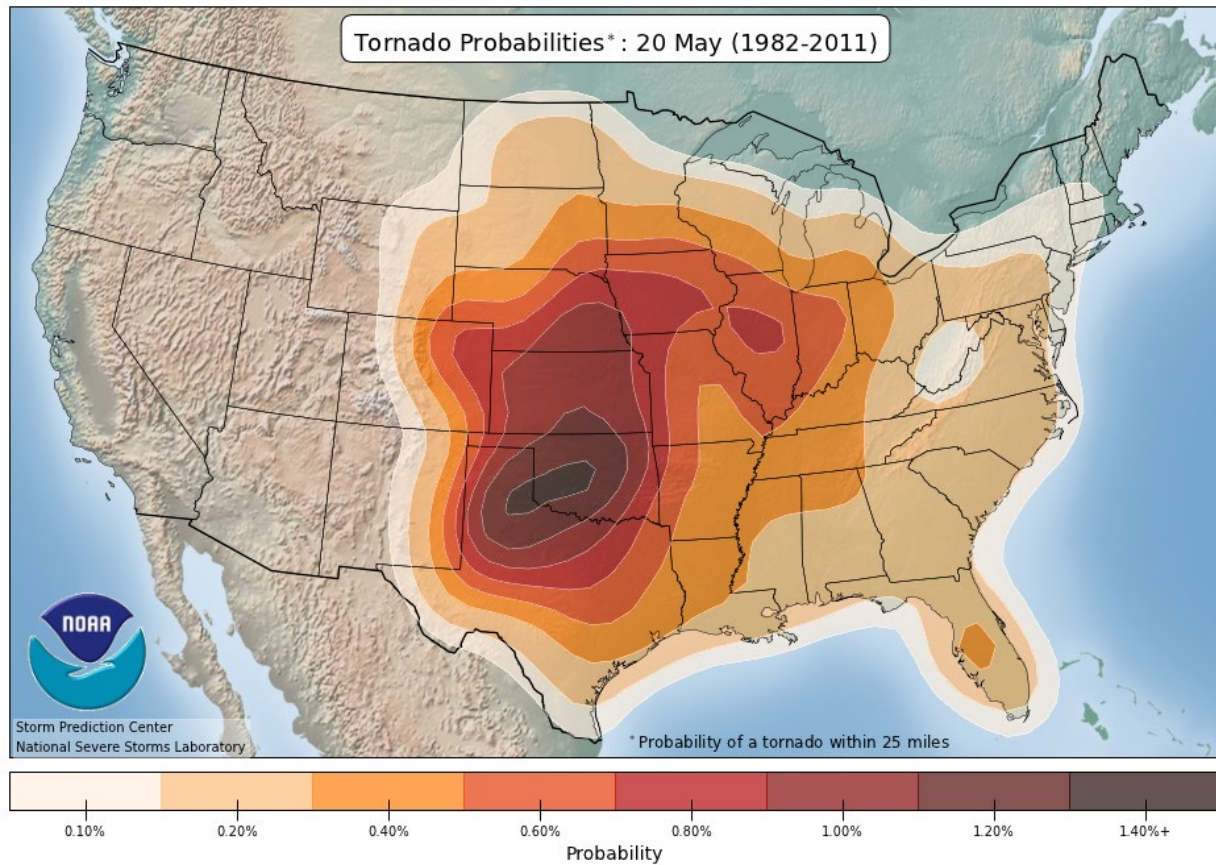
Pros	Cons
<p>1) Near the highest probability of significant tornadoes (F/EF-2+), however, bias in how tornadoes are rated may influence these probabilities.</p>	<p>1) Significant events this time of year bring massive “chaser convergence”; this can significantly alter chasing strategy and the ease with which you can stay on storms with good visuals.</p>
<p>2) The locations with the largest probabilities of experiencing tornadoes and severe thunderstorms typically have very favorable road networks and visibility for storm chasers.</p>	<p>2) Storm chasing targets are typically more spread out geographically compared to Trip 1. You may not be able to chase every day there is a good severe weather setup.</p>
<p>3) This is “peak” storm chasing season, the time of year that typically has the most activity for severe thunderstorms and tornadoes.</p>	<p>3) It is now late enough in the year for significant capping to become more common, which may prevent storms altogether. Managing expectations can be more difficult this time of year.</p>
<p>4) More daylight hours compared to Trip 1, but chasing generally continues to be in areas where hotel options prevent extremely late nights.</p>	<p>4) Competition for restaurants and hotel rooms with the numerous other storm chasers may end up leading to late nights after some chases.</p>
<p>5) Many field projects and research campaigns occur this time of year; if you ever wanted to see mobile radars and other research equipment in action, this is typically the best time.</p>	<p>5) Down day tours of research facilities and places like the National Weather Center tend to be more difficult to arrange this time of year as many of those people are out in the field.</p>

Trip 2 (Mid May/Late May) Significant Tornado Probabilities



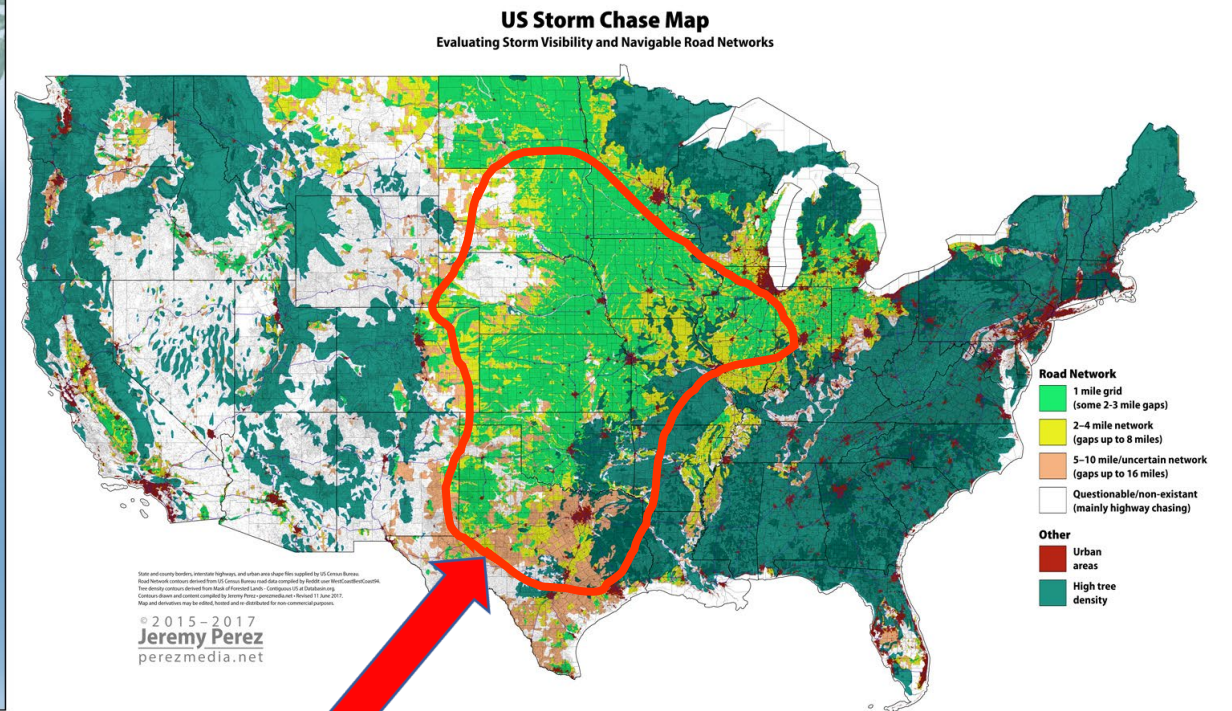
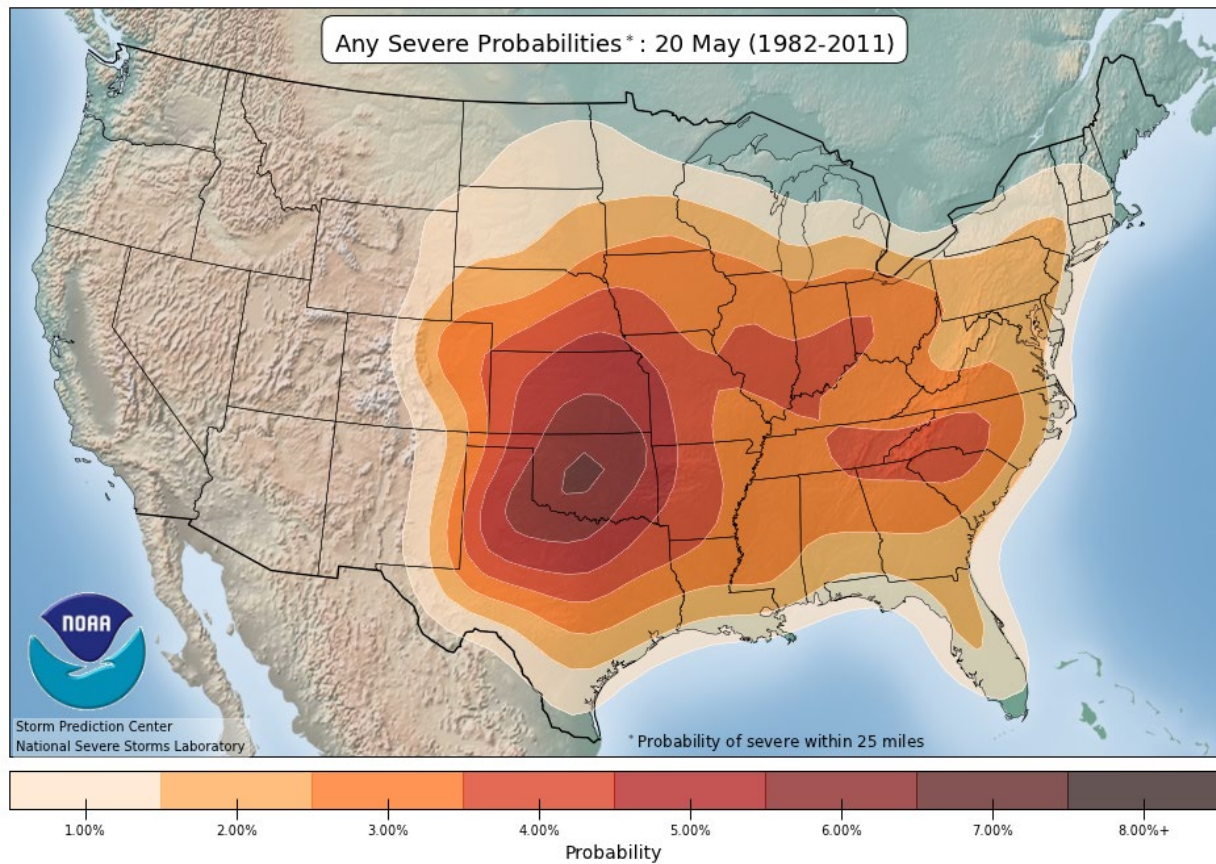
* *Expected region for severe weather setups you may chase*

Trip 2 (Mid May/Late May) Tornado Probabilities



* *Expected region for severe weather setups you may chase*

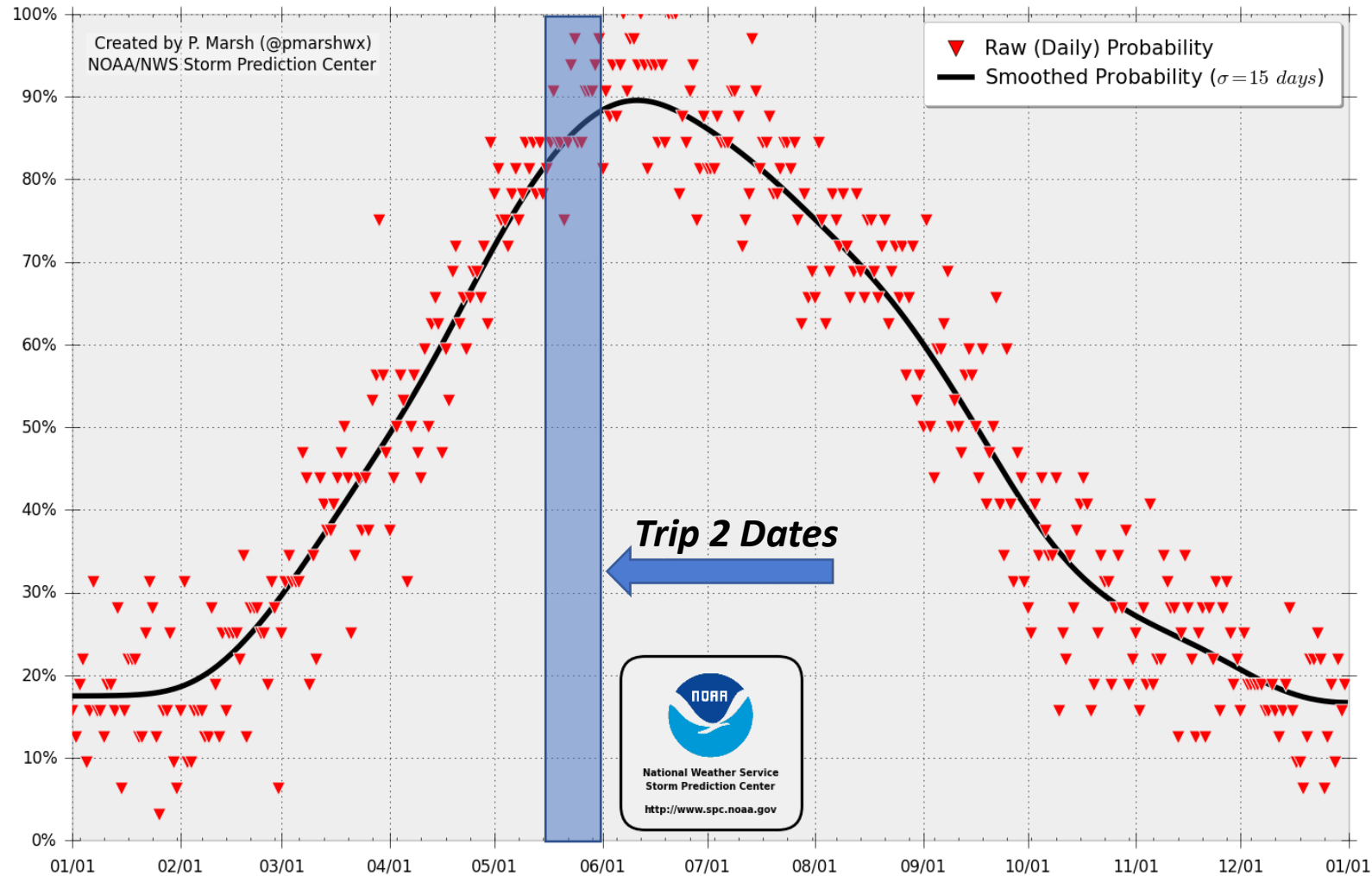
Trip 2 (Mid May/Late May) Severe Probabilities



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Trip 2 (Mid May/Late May) Daily Tornado Probabilities

Daily Probability of 1+ Tornadoes in the United States
Derived From 1980-2011



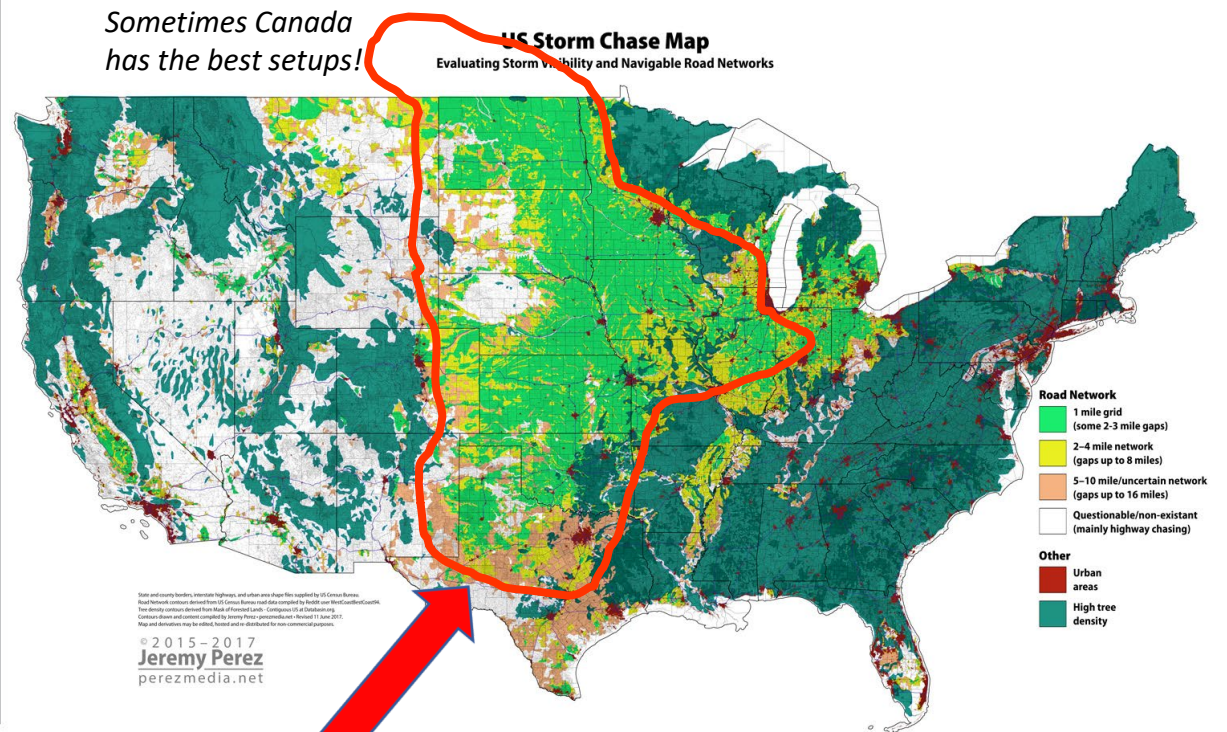
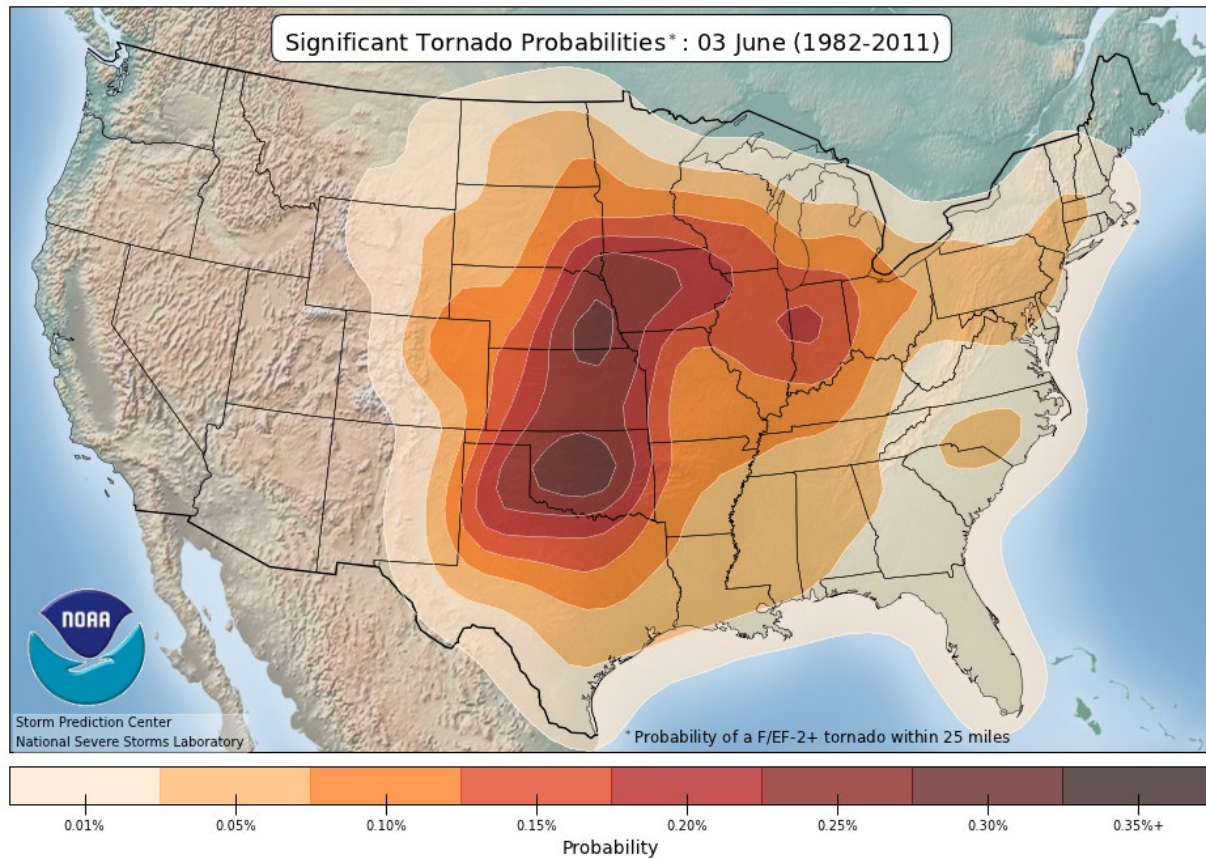
Some Notable Tornadoes During Mid/Late May

- May 20th, 1957 Ruskin Heights, MO (F5)
- May 20th, 2013 Moore, OK (EF5)
- May 22nd, 2011 Joplin, MO (EF5)
- May 24th, 2011 El Reno/Piedmont, OK (EF5)
- May 25th, 1955 Udall, KS and Blackwell, OK (2 F5s)
- May 25th, 2008 Parkersburg, IA (EF5)
- May 27th, 1997 Jarrell, TX (F5)
- May 29th, 1953 Ft. Rice, ND (F5)
- May 31st, 1985 Niles, OH (F5)

Trip 3 (Early June) Pros and Cons

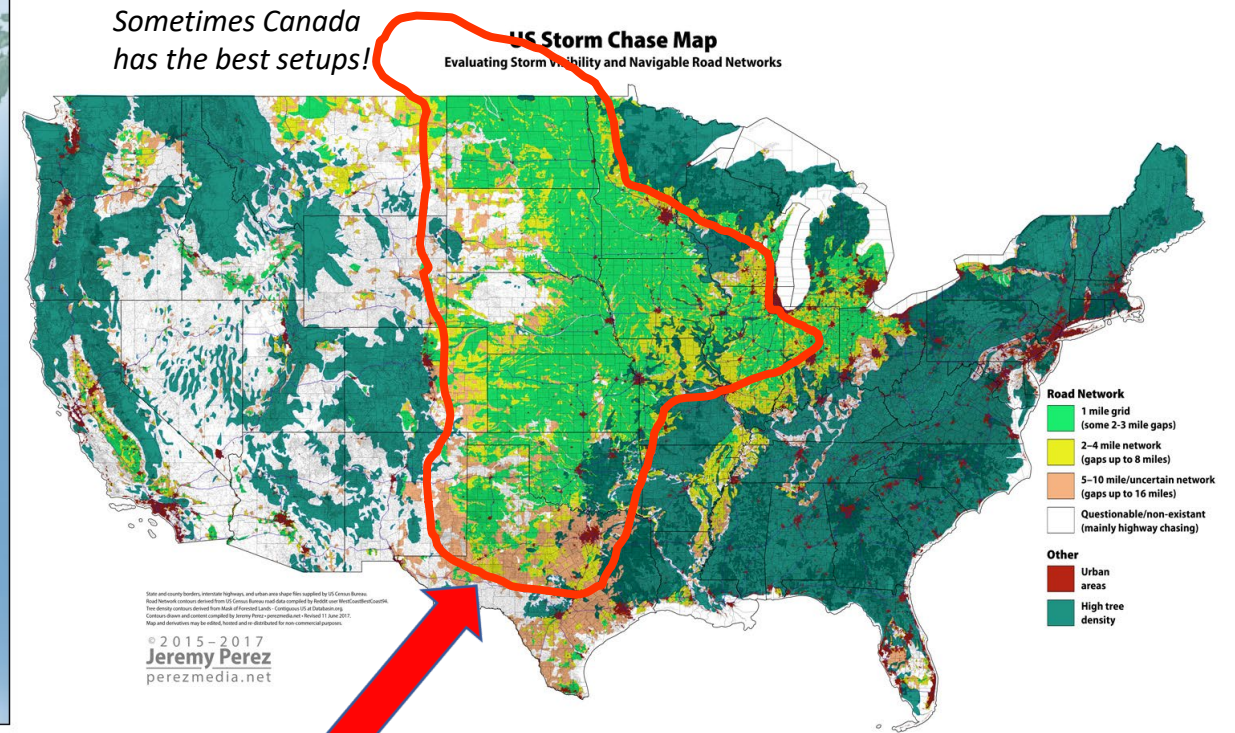
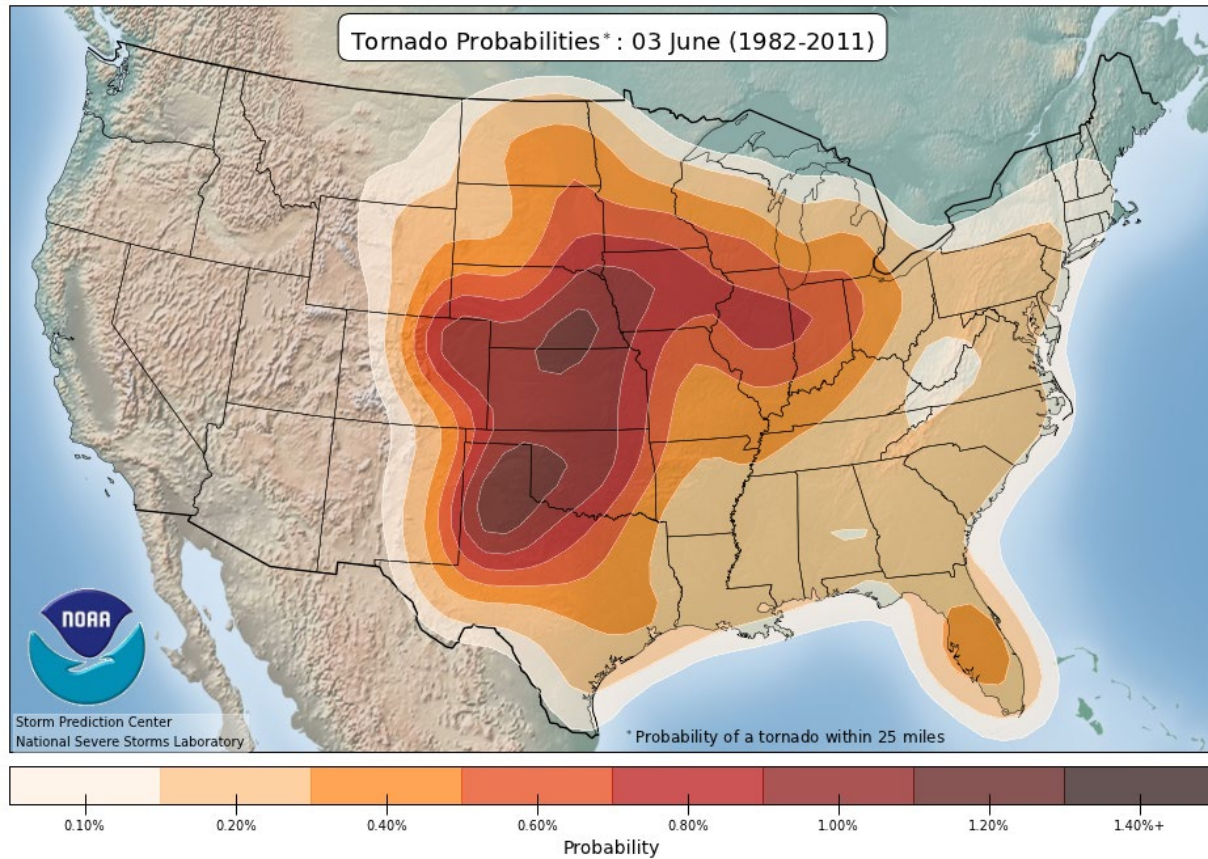
Pros	Cons
1) Storm motions tend to be slower this time of year, allowing more time out of the vans for observing and photo opportunities during most storm chases.	1) The probability of significant tornadoes (F/EF-2+) is now off of its peak and declining, however, bias in how tornadoes are rated may influence these probabilities.
2) The locations with the largest probabilities of experiencing tornadoes and severe thunderstorms typically have very favorable road networks and visibility for storm chasers.	2) Storm chasing targets are typically more spread out geographically compared to both Trips 1 and 2. You may not be able to chase every day there is a good severe weather setup.
3) This is a bit past “peak” storm chasing season, but still during the time of year that typically has the most activity for severe thunderstorms and tornadoes.	3) Significant capping and ridging that prevents storms becomes more common. However, this can be offset to some degree by increasing high plains activity (from upslope flow).
4) Daylight hours are increased compared to both Trips 1 and 2, and the number of other storm chasers out begins decreasing; This can lead to longer, more enjoyable storm chase days.	4) <i>Be prepared for late nights!</i> Storm chases may not end up until after 9PM, with a long drive to a hotel following the end of the storm chase.
5) Some potential negatives such as a weaker jet stream and more capping often help produce more photogenic storms when there are chase days (commonly in high visibility areas).	5) High temperatures both on chase days and travel/sightseeing days are becoming more common, keep this in mind if you do not handle high temperatures well!

Trip 3 (Early June) Significant Tornado Probabilities



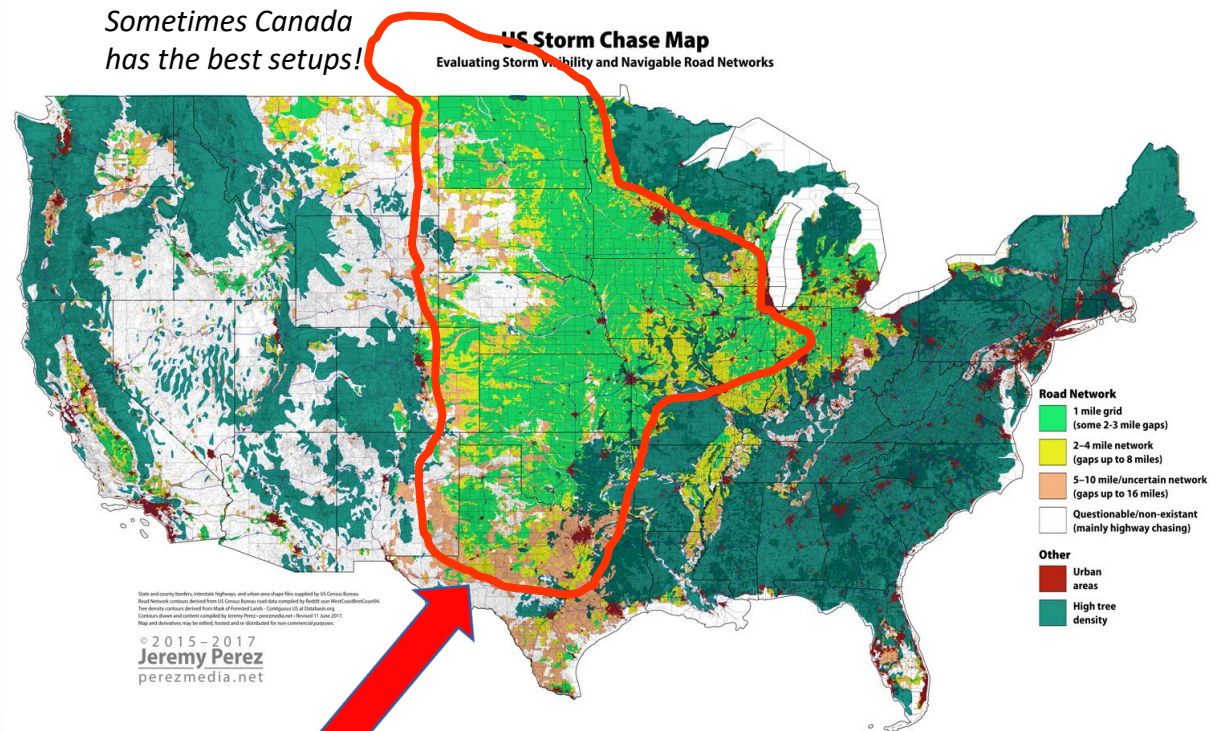
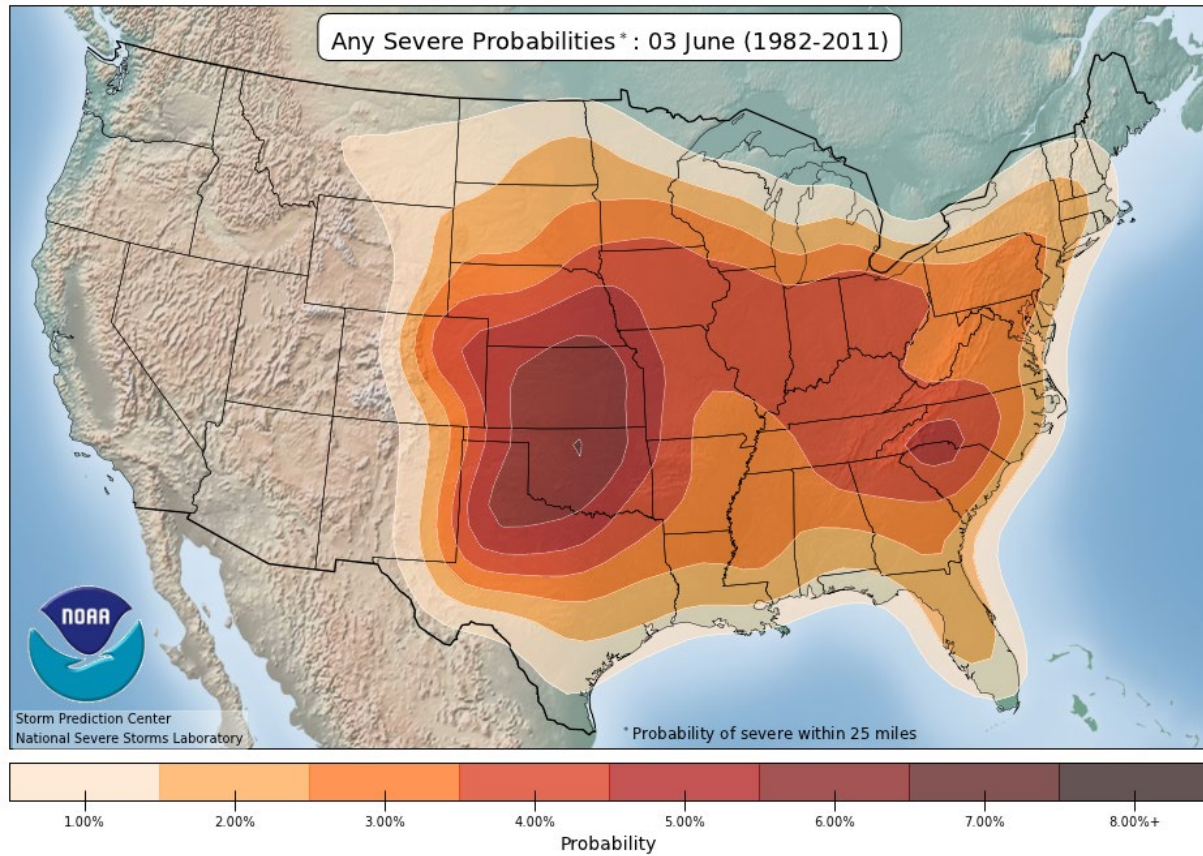
* *Expected region for severe weather setups you may chase*

Trip 3 (Early June) Tornado Probabilities



* *Expected region for severe weather setups you may chase*

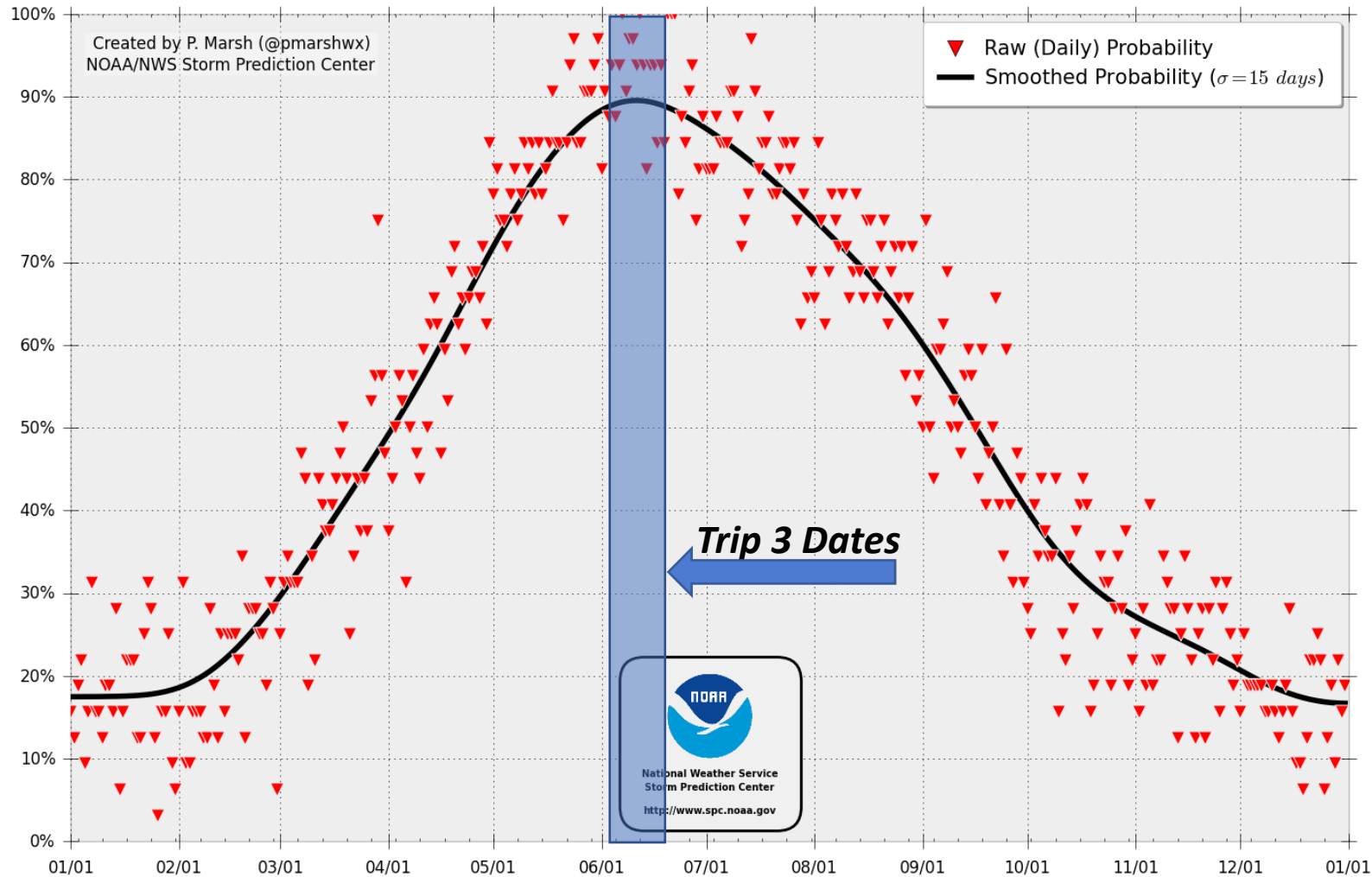
Trip 3 (Early June) Severe Probabilities



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Trip 3 (Early June) Daily Tornado Probabilities

Daily Probability of 1+ Tornadoes in the United States
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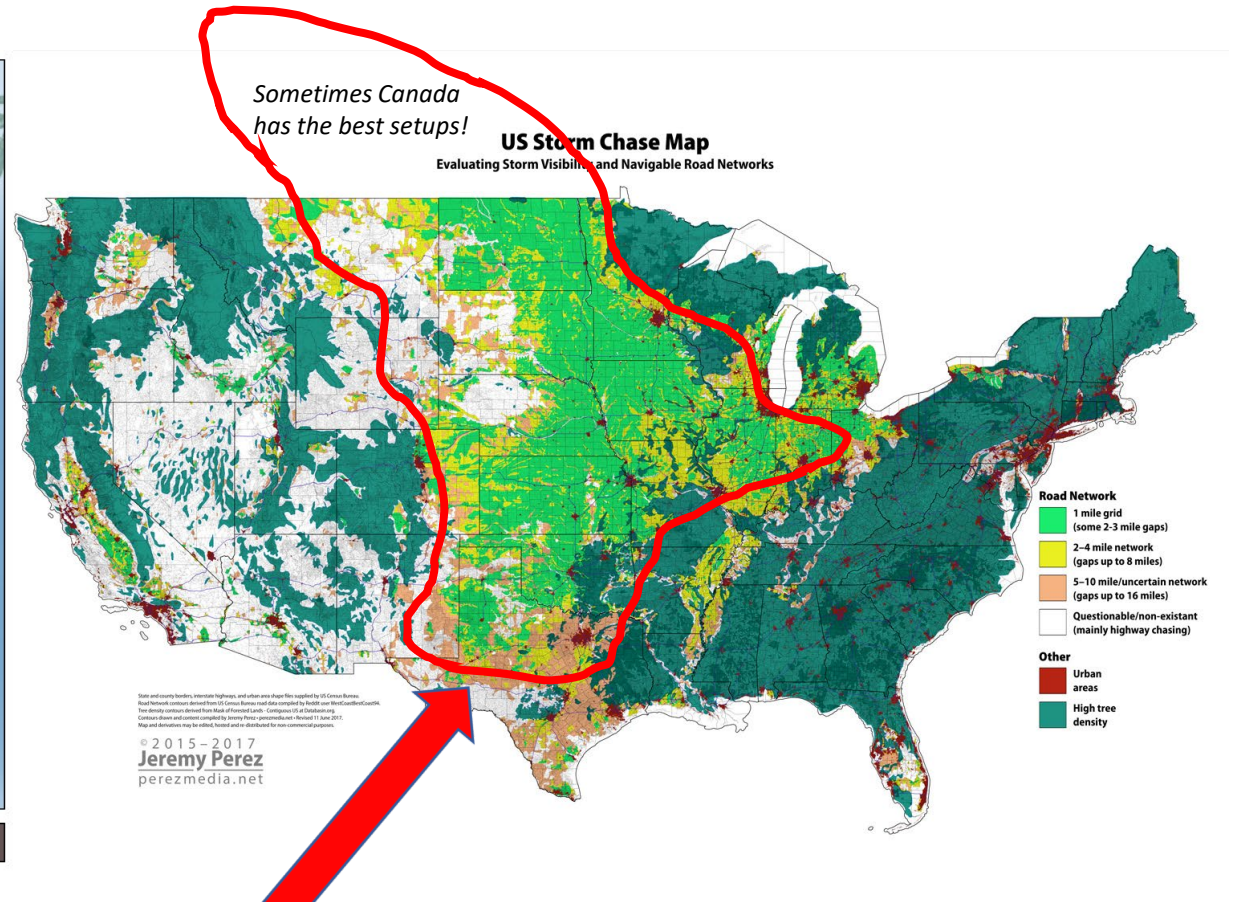
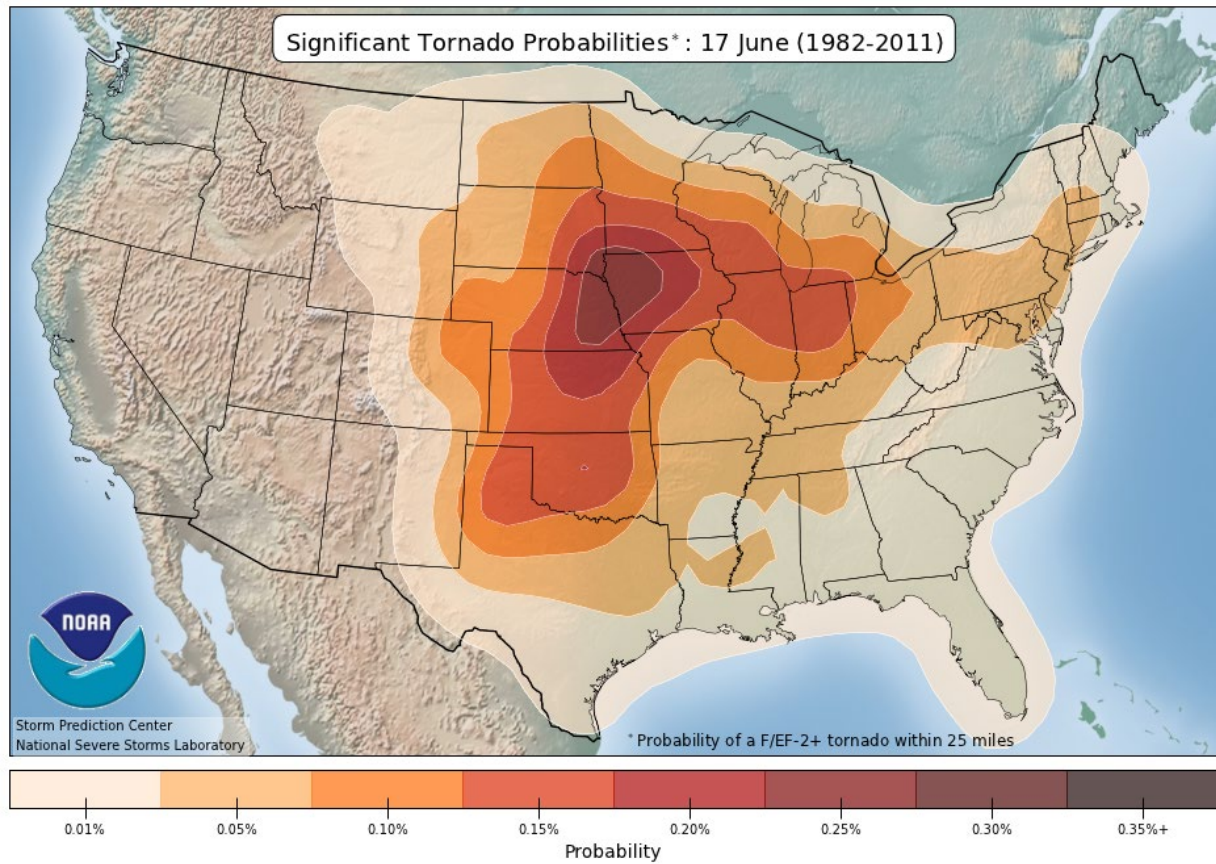
Some Notable Tornadoes During Early June

- June 2nd, 1990 IL/IN/OH (7 F4s)
- June 4th, 1955 Kansas/Nebraska (2 F4s)
- June 4th, 1958 Menomonie, WI (F5)
- June 5th, 2010 Millbury, OH (EF4)
- June 7th, 1953 Arcadia, NE (F4)
- June 7th, 1984 Barneveld, WI (F5)
- June 8th, 1953 Flint, MI (F5)
- June 8th, 1966 Topeka, KS (F5)
- June 10th, 1958 El Dorado, KS (F4)

Trip 4 (Mid/Late June) Pros and Cons

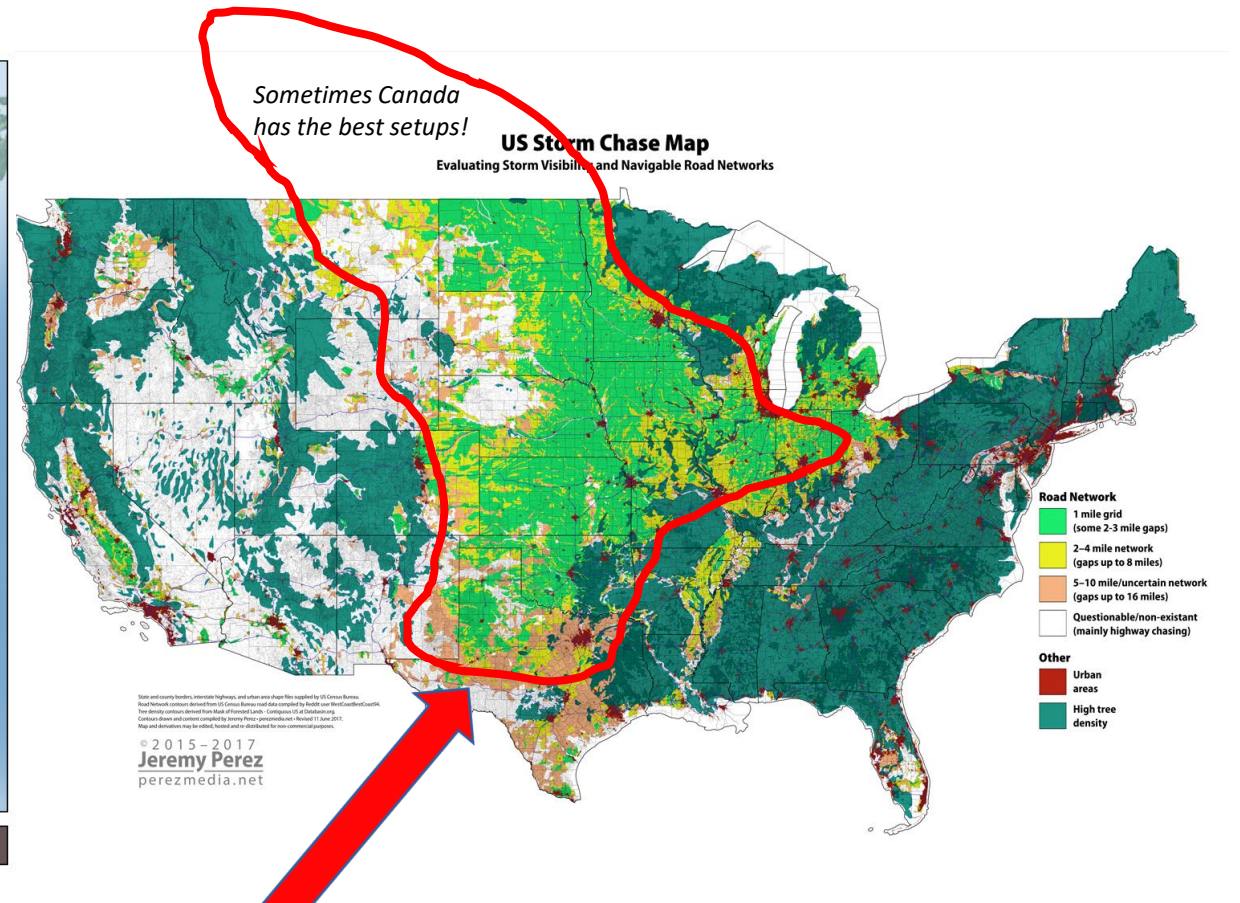
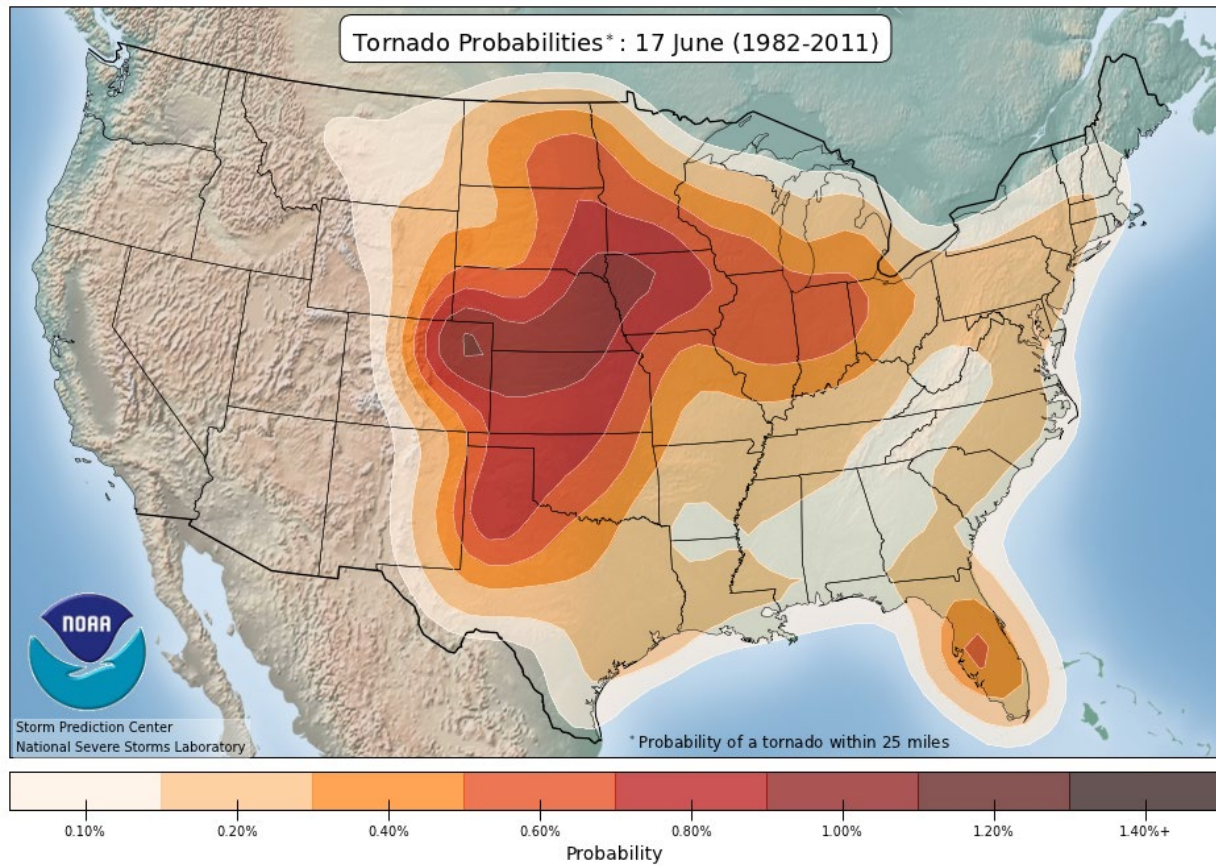
Pros	Cons
1) The slowest storm motions for any of the trips are expected this time of year, allowing the most time out of the vans for observing and photo opportunities during most storm chases.	1) The probability of significant tornadoes (F/EF-2+) continues to decline, however, bias in how tornadoes are rated may influence these probabilities.
2) The northern plains and high plains are common storm chase locations during this time, and they provide excellent visibility and scenic, wide-open spaces to view storms above.	2) Storm chasing targets are the most geographically spread out of any of the trips. You may not be able to chase every day there is a good severe weather setup.
3) Although this is towards the end of the storm chasing season, this time of year still features near peak probabilities of at least 1 tornado occurring somewhere in the U.S. each day.	3) Significant capping and ridging that prevents storms becomes common. However, this can be offset to some degree by increasing high plains activity (from upslope flow).
4) The greatest amount of daylight hours for any trip, and typically the least amount of other storm chasers out; This can lead to longer, more enjoyable storm chase days.	4) <i>Be prepared for late nights!</i> Storm chases may not end until <i>after 10PM</i> , with a potential long drive to a hotel following the end of the storm chase.
5) Some of the best storm structure occurs this time of year, often with slow moving storms over wide-open spaces. If you like doing timelapse photography, this may be the best trip!	5) High temperatures on chase days and travel/sightseeing days are common, keep this in mind if you do not handle high temperatures well!

Trip 4 (Mid June/Late June) Significant Tornado Probabilities



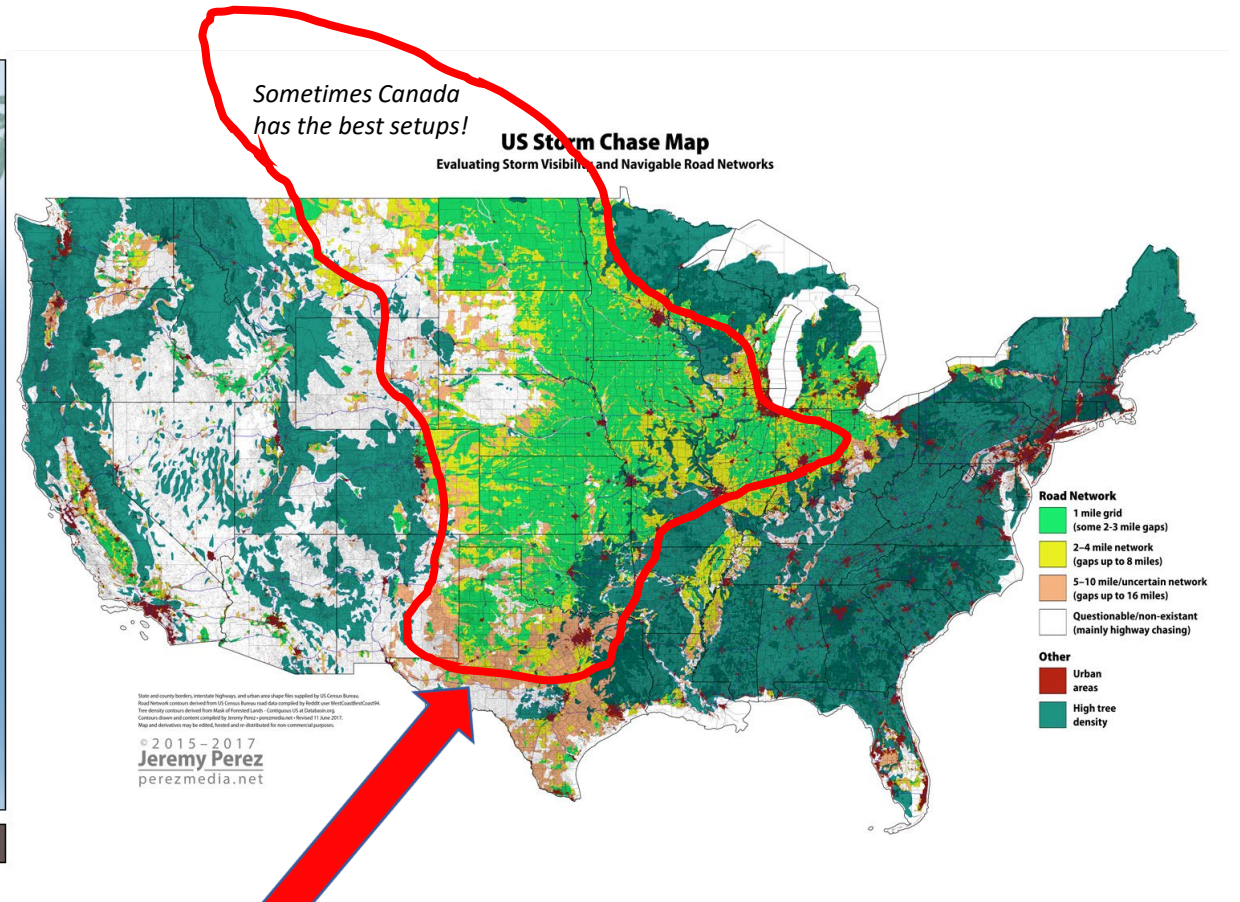
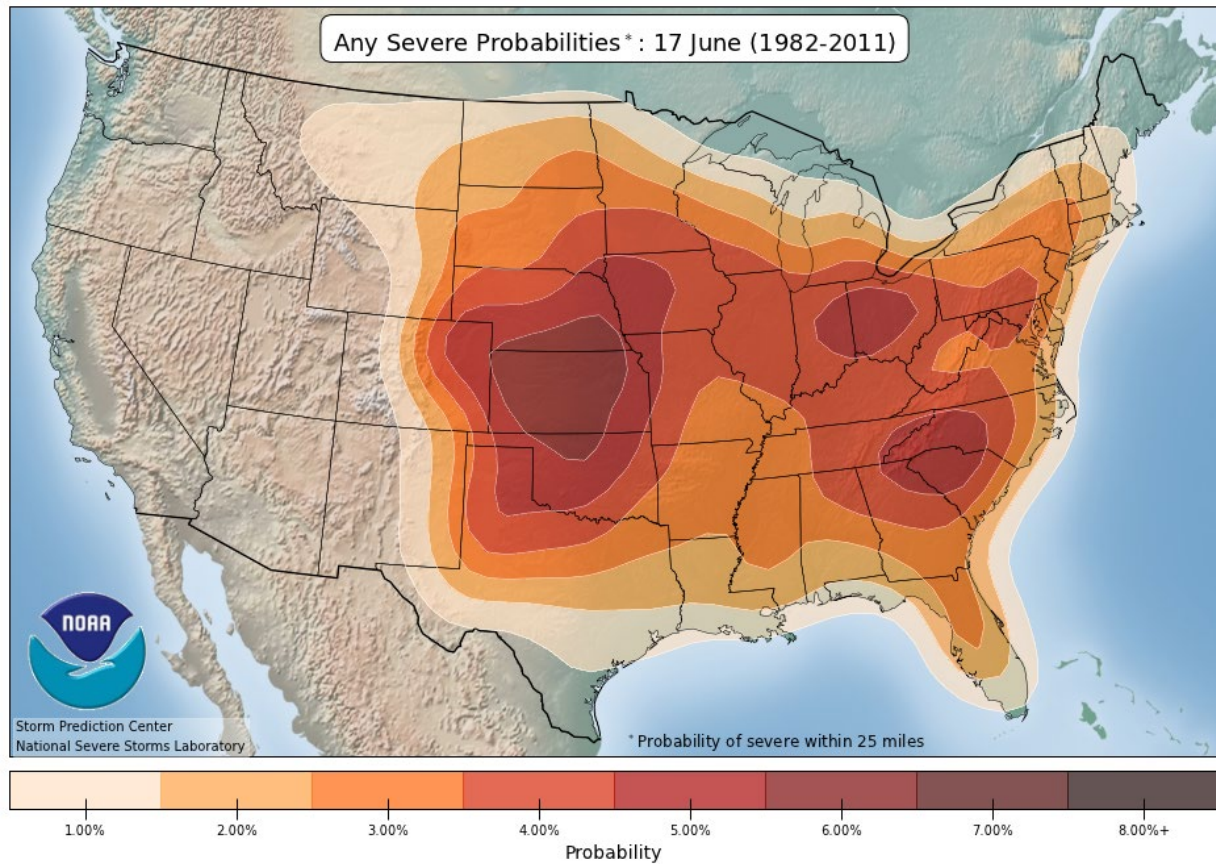
* Expected region for severe weather setups you may chase

Trip 4 (Mid June/Late June) Tornado Probabilities



* **Expected region for severe weather setups you may chase**

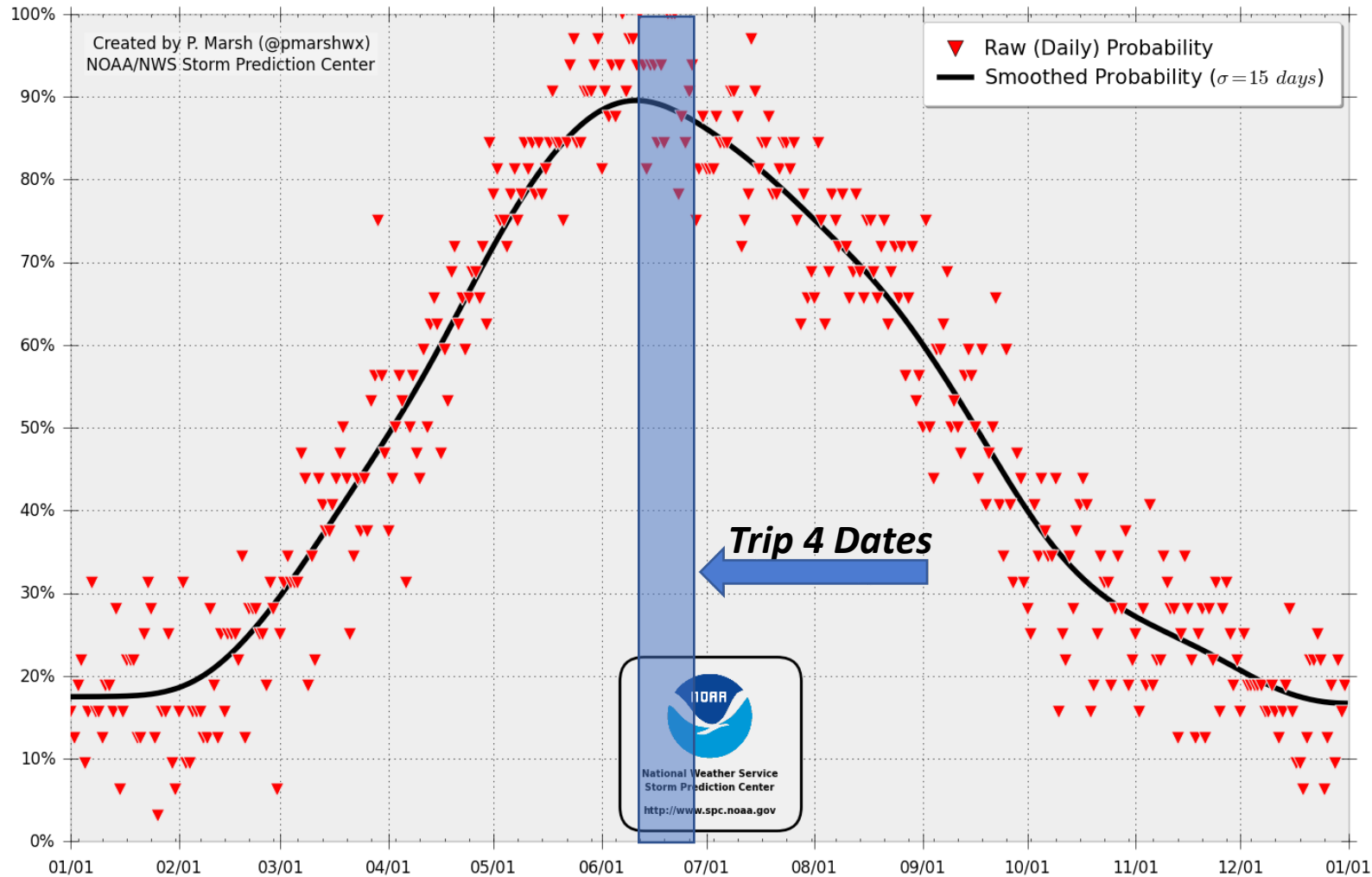
Trip 4 (Mid June/Late June) Severe Probabilities



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Trip 4 (Mid June/Late June) Daily Tornado Probabilities

Daily Probability of 1+ Tornadoes in the United States
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Some Notable Tornadoes During Mid/Late June

- June 16th, 1992 Chandler, MN (F5)
- June 16th, 2014 Pilger/Stanton/Altoona, NE (4 EF4s)
- June 17th, 2010 Parker's Prairie/Wadena/Albert Lea, MN (3 EF4s)
- June 17th, 2010 Holmes, ND (EF4)
- June 18th, 2014 Alpena, SD (EF4)
- June 20th, 1957 Fargo, ND (F5)
- June 22nd, 2007 Elie, Manitoba (F5)
- June 23rd, 2003 Coleridge, NE (F4)
- June 24th, 2003 Manchester, SD (F4)