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# Comparison on the Tornado Climatology

Work done by

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Ryan Husted, 2012

## **Mid-South Severe Weather Climatology Study**

- Tornadoes, Hail, and Wind from 1873 – 2011
- Compared to ENSO category, Day/Night

<https://www.weather.gov/media/meg/research/Mid-SouthSevereClimatologyStudySummary2012.pdf>

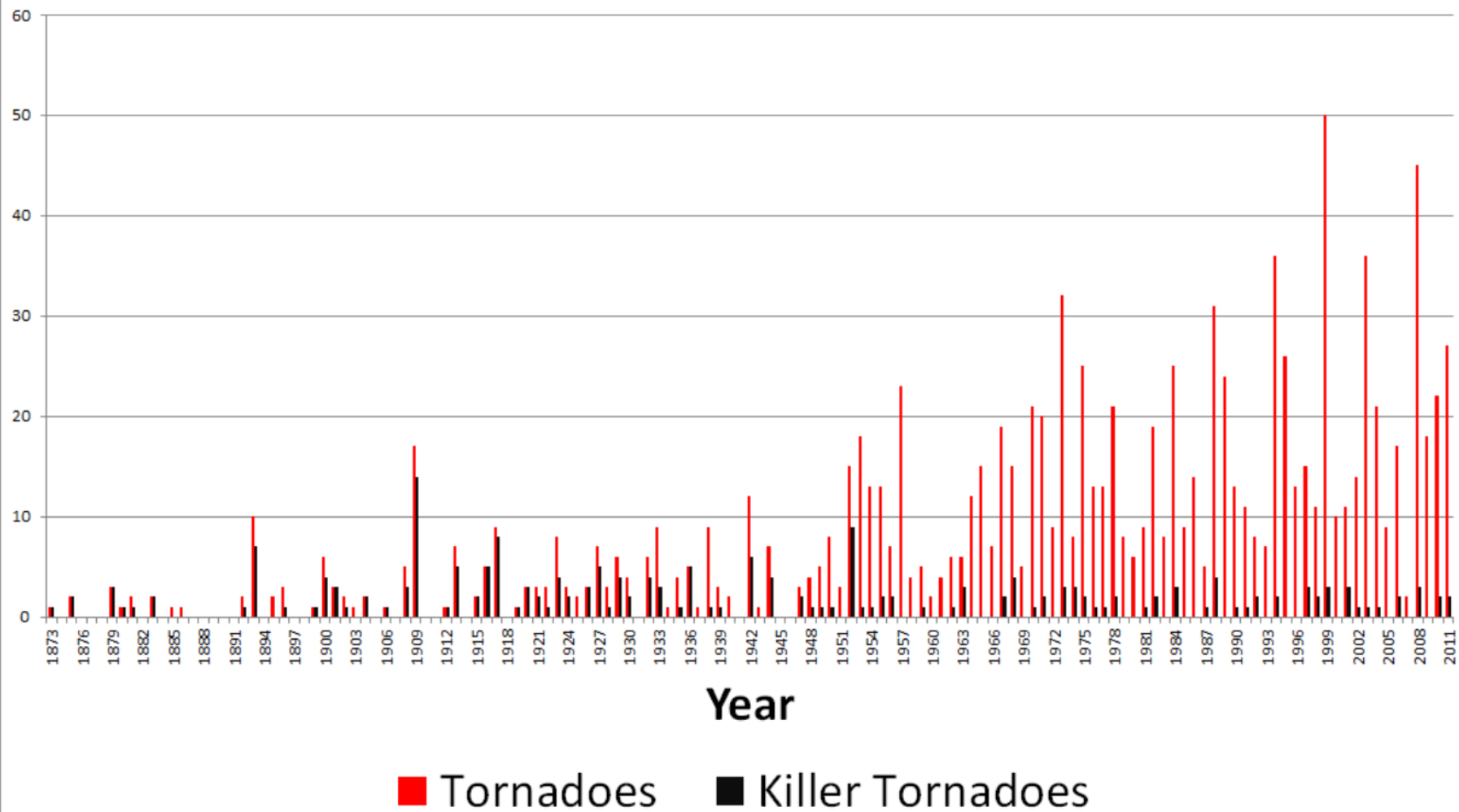
Gavin Fry, 2021

## **Mid-South Tornado Climatology Study**

- Tornadoes from 2007 – 2020
- EF – Scale was introduced in Feb. 2007
- Compared Day/Night, “Outbreak”/Non-outbreak Days

[https://www.weather.gov/media/meg/research/NWSMEG\\_OfficeNote2021\\_01.pdf](https://www.weather.gov/media/meg/research/NWSMEG_OfficeNote2021_01.pdf)

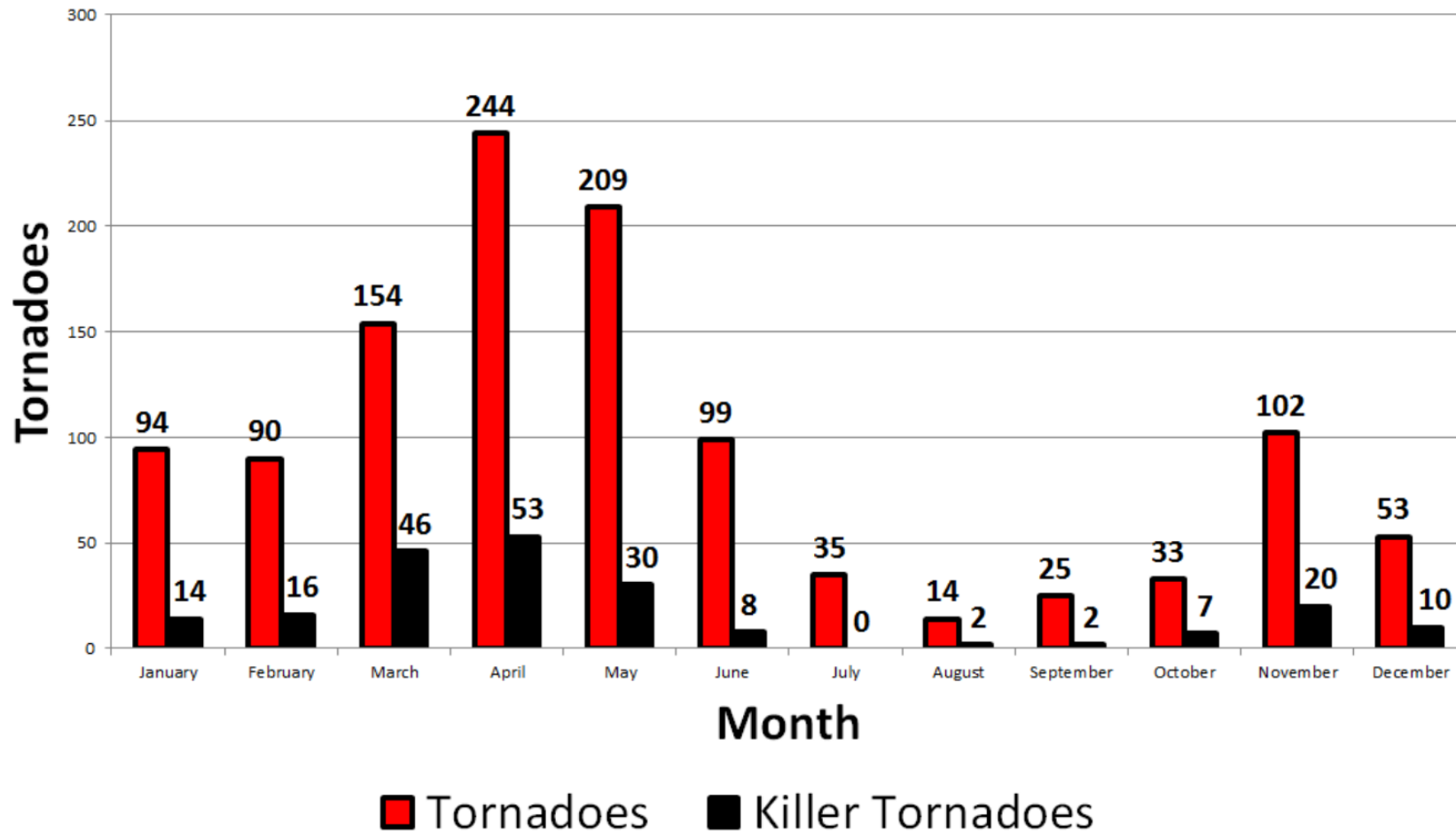
## Yearly Tornadoes from 1873 - 2011



- Study from Mr. Ryan Husted in 2012

- Nine new years of data will be assimilated

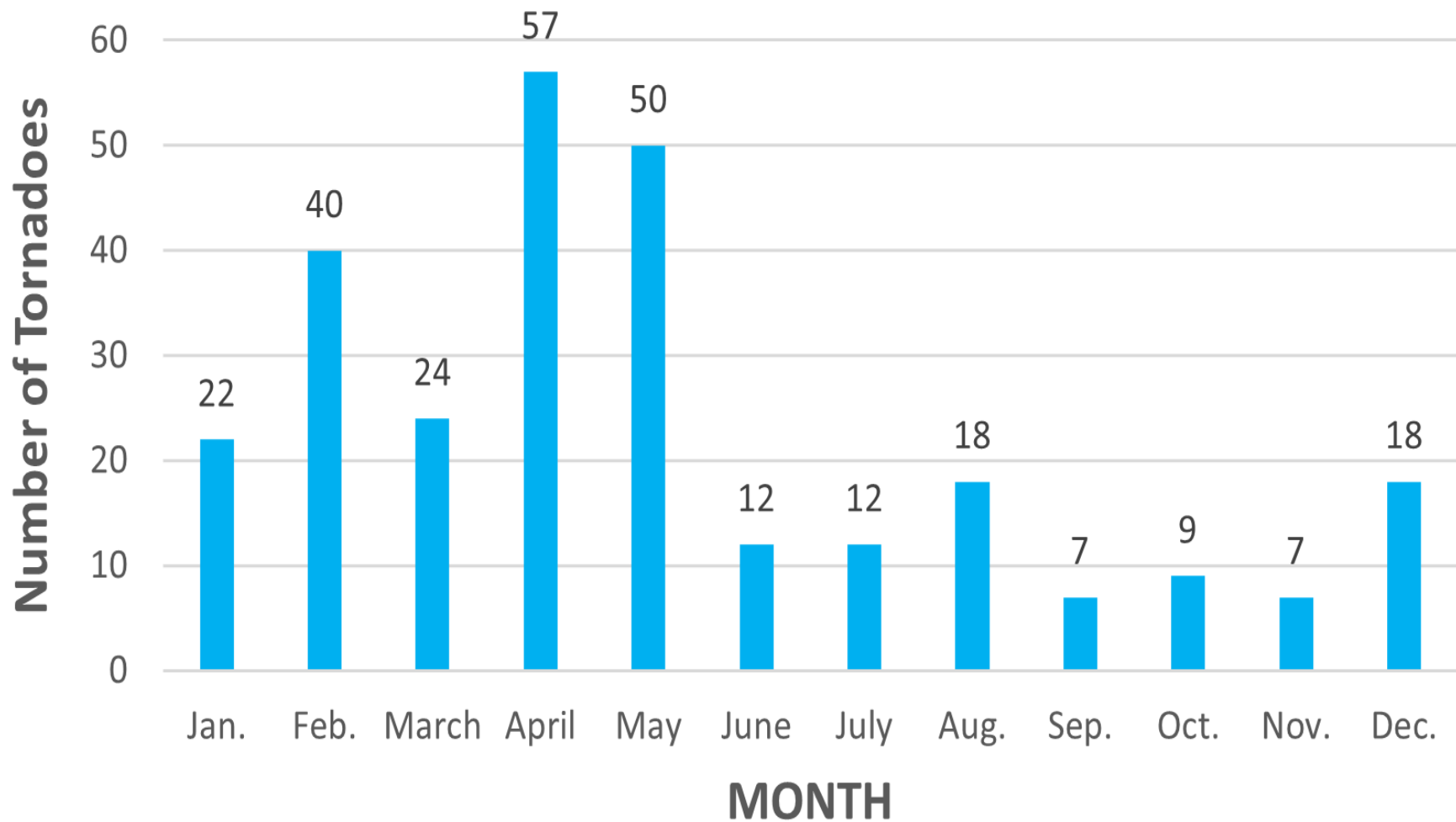
## Monthly Distribution of Tornadoes from 1873 - 2011



- Monthly Distribution shows common trends in tornadic activity throughout the year
- Killer tornado events in Ryan's study will be looked at more closely with new data.

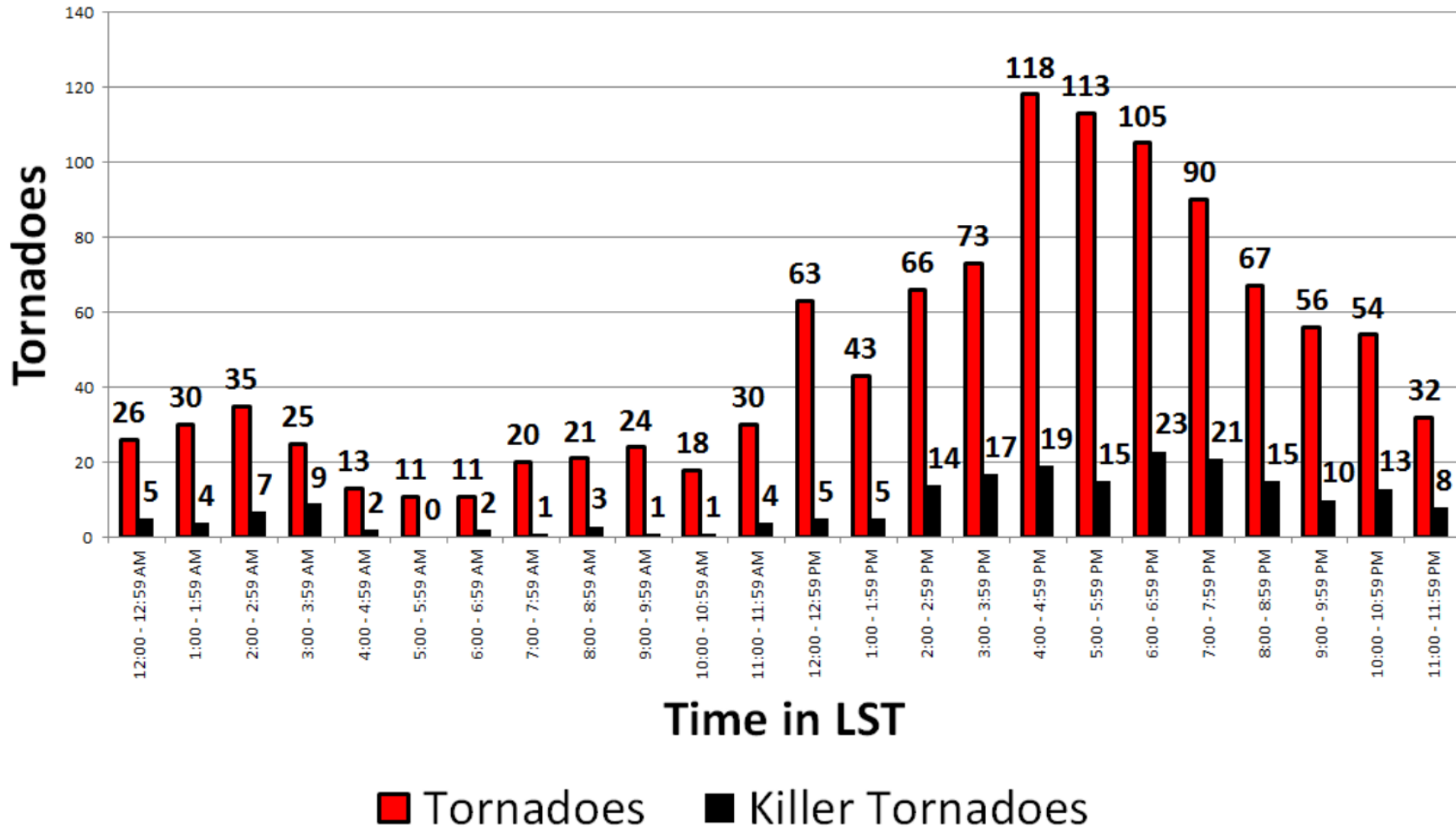


## Monthly Distribution of Tornadoes (2007-2020)



- Updated monthly distribution shows that many trends remain constant.
- Notable outbreak events in February, December, and August skews the data slightly.

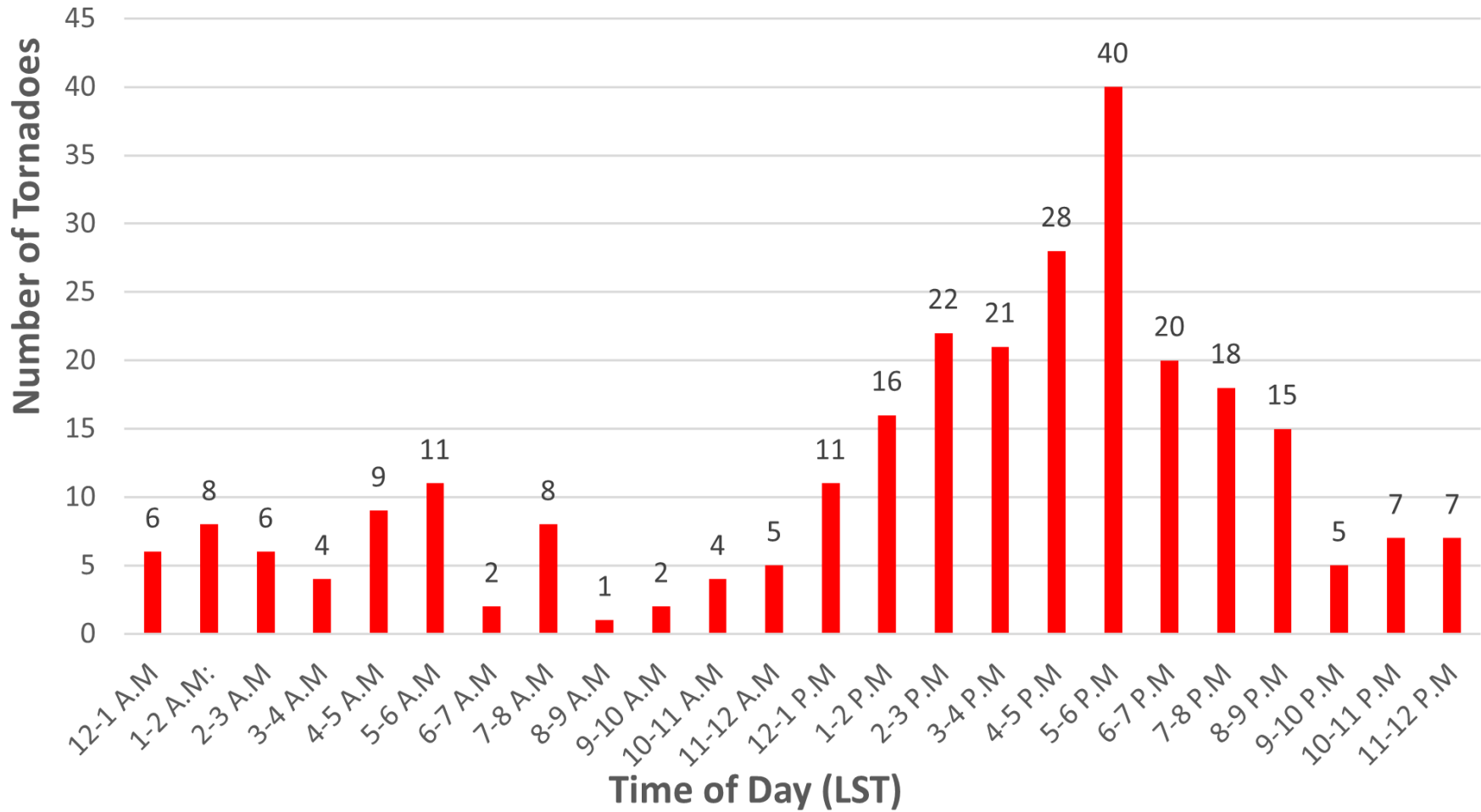
## Hourly Distribution of Tornadoes from 1873 - 2011



- Hourly Distribution of Tornadoes is a key component of killer tornadoes in the Mid-South
- A higher frequency of killer tornadoes occur in the nocturnal hours of 6:00 P.M to 5:59 A.M

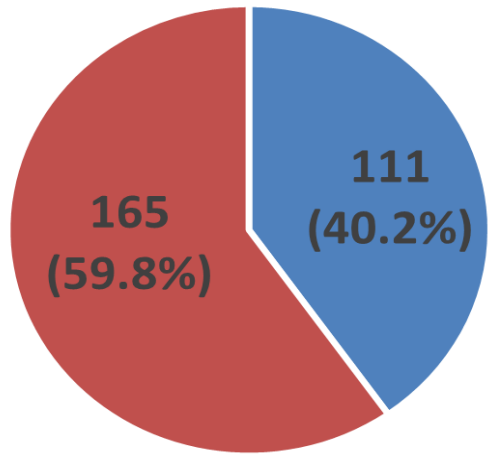


### Hourly Distribution of Tornadoes (2007-2020)



- Updated hourly distribution shows a similar trend to Ryan’s data.
- Peak hours of tornadic activity are found in the mid-afternoon from 3-6 P.M.
- Highest relative frequency of killer tornado events may not be found in this peak time.

## Outbreak vs Non-Outbreak Days Tornado Frequency

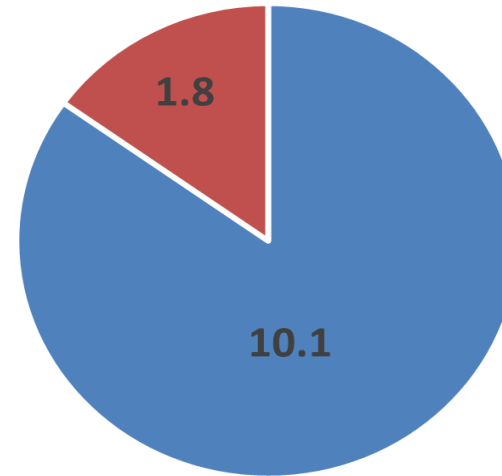


■ Outbreak Days ■ Non-Outbreak Days

11

90

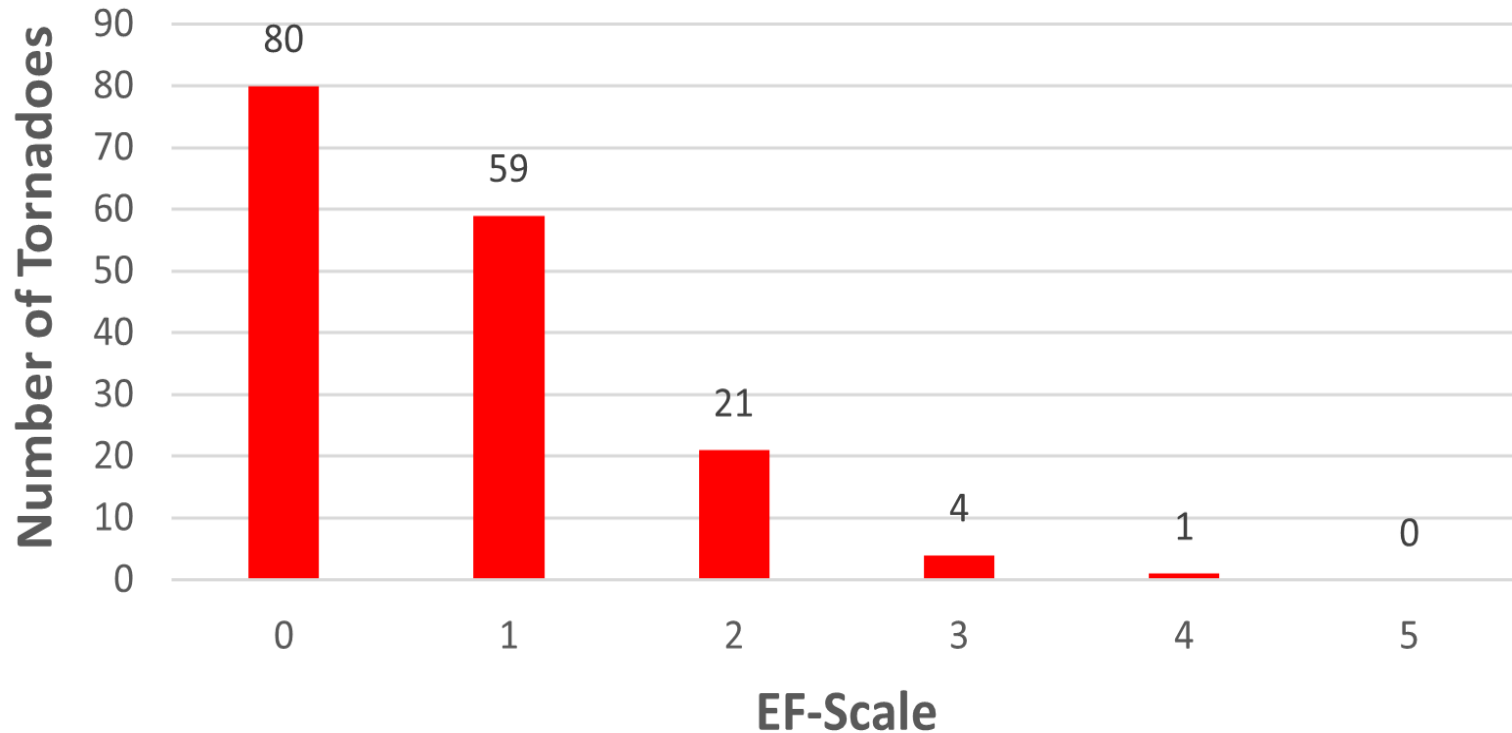
## Normalized Distribution of Tornadoes on Outbreak vs Non-outbreak Days



■ Outbreak Days  
■ Non-Outbreak Days



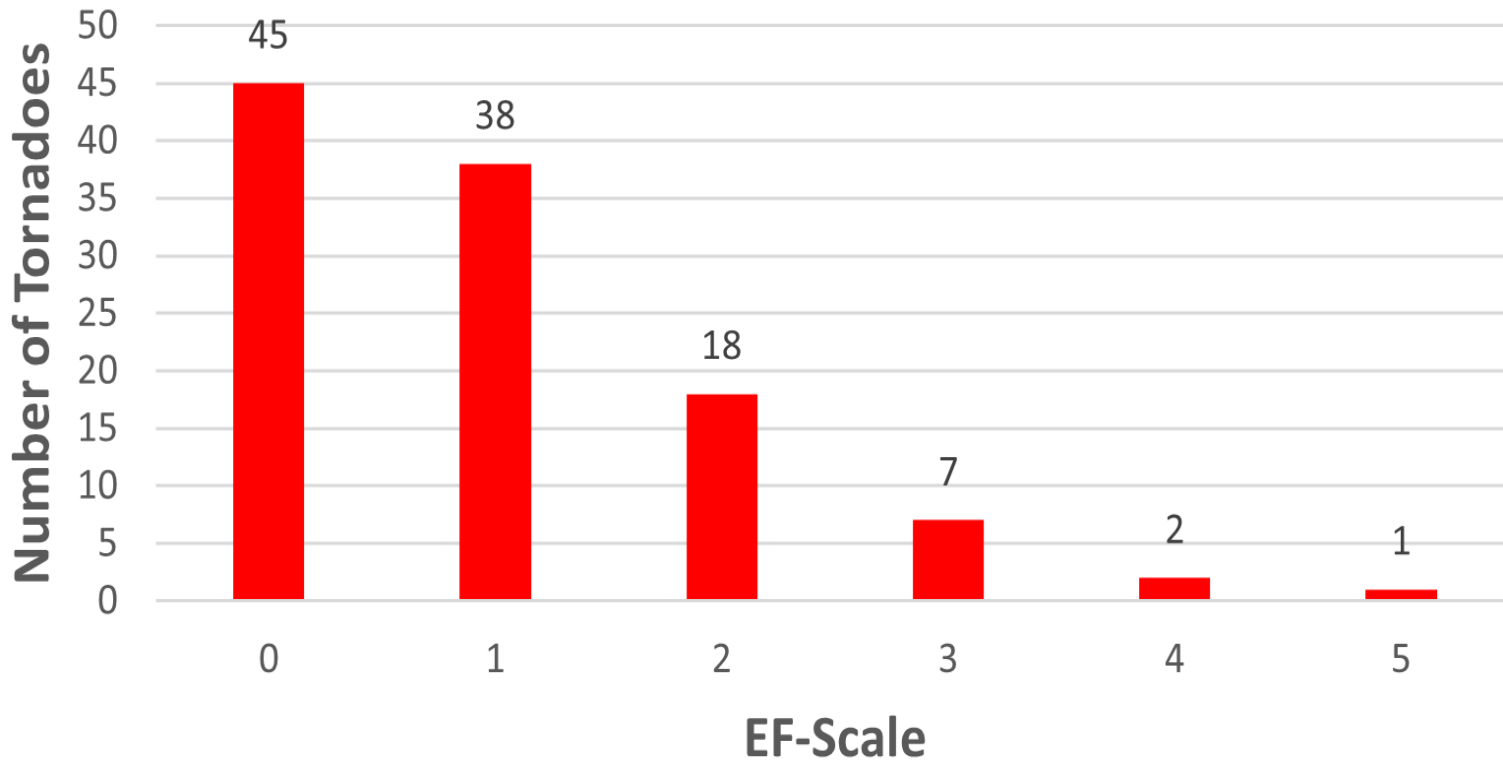
## EF-Scale Distribution on NON-Outbreak Days | 2007-2020



- Most tornadoes in the Mid-south occur on non-outbreak days: days with five or less tornadoes.
- Not all EF-Scale classifications are consistent with this trend.



EF-Scale Distribution on Outbreak Days | 2007 - 2020



- More violent tornadoes (EF3+) occur on outbreak days (days with six or more tornadoes) in the Mid-South.
- Outbreak days could play a major role in the climatology of killer tornadic events in the Mid-South.