**All\_Tornadoes**

This dataset includes all tornadoes in the SPC reports between 1994 and 2022. There are 35,550 reports and 40 variables included in the data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Column Name*** | ***Explanation*** | ***Units*** | ***Format*** | ***Notes*** |
| om | Tornado Number in the Record |  |  |  |
| yr | Year |  |  |  |
| mo | Month |  |  |  |
| dy | Day |  |  |  |
| date | Date |  | yyyy-mm-dd |  |
| time | Time | CST | HH:MM:SS |  |
| tz | Timezone | CST |  | All times converted to 3 = CST |
| st | State |  |  | Two letter abbreviation |
| stf | State FIPS Number |  |  |  |
| stn | State Number |  |  |  |
| mag | Tornado Magnitude |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| inj | Number of Injuries |  |  |  |
| fat | Number of Fatalities |  |  |  |
| loss | Estimate property loss information |  |  | Categorization of tornado damage by dollar amount before 1996: 1<$50, 2 = $50-$500, 3 - $500-$5000, 4 = $5000-$50000, 5 = $50000-$500000, 6 = $500000-$5000000, 7 = $5000000-$50000000, 8 = $50000000-$500000000, 9 = $5000000000. After 1996, this is the property damage in millions of dollars. |
| closs | Estimate crop loss in millions of dollars |  |  | started in 2007 |
| elat | End Latitude | in decimal degrees |  |  |
| elon | End Longitude | in decimal degrees |  |  |
| len | Path Length | Miles |  |  |
| wid | Path Width | Yards |  |  |
| ns | Number of states affected by this tornadoes |  |  |  |
| sn | State Number totals | 1 or 0 |  | 1: Entire track information in this state |
| sg | Tornado Segment Number | 1, 2, or -9 |  | 1 = entire track information |
| f1 | 1st county FIPS code |  |  |  |
| f2 | 2nd county FIPS code |  |  |  |
| f3 | 3rd County FIPS code |  |  |  |
| f4 | 4th County FIPS code |  |  |  |
| fc | unaltered EF scale rating | 0 or 1 |  | 0: unaltered EF scale rating; 1: previous rating was -9 |
| DateTime | Date and Time |  | YYYY-MM-DD HH:MM:SS |  |
| Hour | Hour |  | HH |  |
| Year | Year |  | YYYY |  |
| cDateTime | Convective Date and Time |  | YYYY-MM-DD HH:MM:SS | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| cDate | Convective Date |  | YYYY-MM-DD | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| Length | Path Length | in meters |  |  |
| Width | Path Width | in meters |  |  |
| cas | Total injuries and Fatalities |  |  |  |
| AreaPath | Area of the tornado track | meters squared |  |  |
| Ma | Three letter month abbreviation |  |  |  |
| ED | Energy Dissapation | in Watts |  |  |
| groupNumber | Assigned group number |  |  |  |
| geometry | geometry of the start location | in northing and easting coordinates |  |  |

**BigDayCentroids.df**

This dataset includes the central location of the tornadoes on a Big Day (outbreak) with at least 6 tornadoes. The date range is between 1994 and 2022. There are 890 Big Days and 68 variables included in the data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Column Name*** | ***Explanation*** | ***Units*** | ***Format*** | ***Notes*** |
| groupNumber | Assigned group number |  |  |  |
| cDate | Convective Date |  | YYYY-MM-DD | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| nT | number of tornadoes |  |  |  |
| n0 | number of tornadoes rated 0 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n1 | number of tornadoes rated 1 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n2 | number of tornadoes rated 2 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n3 | number of tornadoes rated 3 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n4 | number of tornadoes rated 4 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n5 | number of tornadoes rated 5 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| ATP | Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| maxATP | Maximum Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| avgATP | Average Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| GroupDayCas | total number of casualties |  |  |  |
| GroupDayFat | total number of fatalities |  |  |  |
| StartTime\_CST | Start Time | in Central Standard Time |  |  |
| EndTime\_CST | End Time | in Central Standard Time |  |  |
| StartTime\_UTC | Start Time | in Universal Time Coordinated |  |  |
| EndTIme\_UTC | End Time | in Universal Time Coordinated |  |  |
| Duration | Duration | in seconds |  |  |
| year | Year |  | YYYY |  |
| Mo | Month |  | MM |  |
| Month | Month |  | MM |  |
| Day | Day |  | DD |  |
| ATP\_TW | Accumulated Tornado Power | in TerraWatts |  |  |
| ID | Identification Number |  | YYYYMMDDGN | Year-Month-Day-GroupNumber |
| NARRtime | NARR time |  | YYYY-MM-DD HH:MM:SS | Uses StartTime\_UTC to get the closest 3-hour NARR time prior to the event |
| NARRday | NARR day |  | YYYY/MM/DD | Day of the NARR download file |
| NARRZtime | NARR Zulu Time |  | HH | Closest 3-hour NARR time |
| YrMoDa | Year Month Day |  | YYYYMMDD |  |
| slug | link to read in NARR data file by time |  | URL |  |
| slug2 | link to read in NARR data file by day |  | URL |  |
| HullArea | Spatial extent of tornadoes | in meters squared |  |  |
| avgCAPE | Average CAPE in HullArea | J/kg |  | 0-180mb AGL |
| avgsbCAPE | Average surface-based CAPE in HullArea | J/kg |  | sfc |
| maxCAPE | Maximum CAPE in HullArea | J/kg |  | 0-180mb AGL |
| maxsbCAPE | Maximum surface-based CAPE in HullArea | J/kg |  | sfc |
| avgDEW | Average dewpoint in HullArea | in Kelvin |  | 2 meters above ground |
| maxDEW | Maximum dewpoint in HullArea | in Kelvin |  | 2 meters above ground |
| avgMR | Average Mixing Ratio in HullArea | in kg/kg |  | 2 meters above ground |
| maxMR | Maximum Mixing Ratio in HullArea | in kg/kg |  | 2 meters above ground |
| avgHLCY | Average Helicity in HullArea | m^2/s^2 |  | 0-3000m AGL |
| maxHLCY | Maximum Helicity in HullArea | m^2/s^2 |  | 0-3000m AGL |
| avgCIN | Average CIN in HullArea | J/kg |  | 0-180mb AGL |
| avgsbCIN | Average Surface-based CIN in HullArea | J/kg |  | sfc |
| minCIN | Maximum CIN in HullArea | J/kg |  | 0-180mb AGL |
| minsbCIN | Maximum Surface-based CIN in HullArea | J/kg |  | sfc |
| avgUSTM | Average U component of storm motion in HullArea | m/s |  | 0 - 6000m AGL |
| maxUSTM | Maximum U component of storm motion in HullArea | m/s |  | 0 - 6000m AGL |
| avgVSTM | Average V-wind component in HullArea | m/s |  | 0 - 6000m AGL |
| maxVSTM | Maximum V-wind component in HullArea | m/s |  | 0 - 6000m AGL |
| avgBS\_deep | Average Deep-Layer Bulk Shear in HullArea | m/s |  | sfc - 500 mb |
| maxBS\_deep | Maximum Deep-Layer Bulk Shear in HullArea | m/s |  | sfc - 500 mb |
| avgBS\_shallow | Average Shallow-Layer Bulk Shear in Hull Area | m/s |  | sfc - 850 mb |
| maxBS\_shallow | Maximum Shallow-Layer Bulk Shear in HullArea | m/s |  | sfc - 850 mb |
| avgRATIO | Average of CAPE divided by the absolute value of CIN in HullArea |  |  |  |
| avgSM | Average Storm Motion in HullArea | m/s |  | 0 - 6000m AGL |
| maxSM | Maximum Storm Motion in HullArea | m/s |  | 0 - 6000m AGL |
| minLCL | Minimum Lifted Condensation Level in HullArea | Pascals |  | cloud base |
| maxLCL | Maximum Lifted Condensation Level in HullArea | Pascals |  | cloud base |
| avgLCL | Average Lifted Condensation Level in HullArea | Pascals |  |  |
| PopDensyear | Year for the Population Density value |  | YYYY |  |
| avgPopDens | Average Population Density in HullArea | people per square km |  | Resolution: 2.5 arc-minute (~5km grid spacing) |
| maxPopDens | Maximum Population Density in HullArea | people per square km |  | Resolution: 2.5 arc-minute (~5km grid spacing) |
| totalPopDens | Total Population Density in HullArea | people per square km |  | Resolution: 2.5 arc-minute (~5km grid spacing) |
| geometry | Spatial Extent of Tornadoes for the day | in Northing and Easting Coordinates |  |  |

**BigDays.sfdfT**

This dataset includes the spatial extent of all tornadoes on a Big Day (outbreak) with at least 6 tornadoes. The date range is between 1994 and 2022. There are 890 Big Days and 70 variables included in the data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Column Name*** | ***Explanation*** | ***Units*** | ***Format*** | ***Notes*** |
| groupNumber | Assigned group number |  |  |  |
| cDate | Convective Date |  | YYYY-MM-DD | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| nT | number of tornadoes |  |  |  |
| n0 | number of tornadoes rated 0 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n1 | number of tornadoes rated 1 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n2 | number of tornadoes rated 2 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n3 | number of tornadoes rated 3 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n4 | number of tornadoes rated 4 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n5 | number of tornadoes rated 5 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| ATP | Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| maxATP | Maximum Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| avgATP | Average Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| GroupDayCas | total number of casualties |  |  |  |
| GroupDayFat | total number of fatalities |  |  |  |
| StartTime\_CST | Start Time | in Central Standard Time |  |  |
| EndTime\_CST | End Time | in Central Standard Time |  |  |
| StartTime\_UTC | Start Time | in Universal Time Coordinated |  |  |
| EndTIme\_UTC | End Time | in Universal Time Coordinated |  |  |
| Duration | Duration | in seconds |  |  |
| year | Year |  | YYYY |  |
| Mo | Month |  | MM |  |
| Month | Month |  | MM |  |
| Day | Day |  | DD |  |
| ATP\_TW | Accumulated Tornado Power | in TerraWatts |  |  |
| ID | Identification Number |  | YYYYMMDDGN | Year-Month-Day-GroupNumber |
| NARRtime | NARR time |  | YYYY-MM-DD HH:MM:SS | Uses StartTime\_UTC to get the closest 3-hour NARR time prior to the event |
| NARRday | NARR day |  | YYYY/MM/DD | Day of the NARR download file |
| NARRZtime | NARR Zulu Time |  | HH | Closest 3-hour NARR time |
| YrMoDa | Year Month Day |  | YYYYMMDD |  |
| slug | link to read in NARR data file by time |  | URL |  |
| slug2 | link to read in NARR data file by day |  | URL |  |
| HullArea | Spatial extent of tornadoes | in meters squared |  |  |
| avgCAPE | Average CAPE in HullArea | J/kg |  | 0-180mb AGL |
| avgsbCAPE | Average surface-based CAPE in HullArea | J/kg |  | sfc |
| maxCAPE | Maximum CAPE in HullArea | J/kg |  | 0-180mb AGL |
| maxsbCAPE | Maximum surface-based CAPE in HullArea | J/kg |  | sfc |
| avgDEW | Average dewpoint in HullArea | in Kelvin |  | 2 meters above ground |
| maxDEW | Maximum dewpoint in HullArea | in Kelvin |  | 2 meters above ground |
| avgMR | Average Mixing Ratio in HullArea | in kg/kg |  | 2 meters above ground |
| maxMR | Maximum Mixing Ratio in HullArea | in kg/kg |  | 2 meters above ground |
| avgHLCY | Average Helicity in HullArea | m^2/s^2 |  | 0-3000m AGL |
| maxHLCY | Maximum Helicity in HullArea | m^2/s^2 |  | 0-3000m AGL |
| avgCIN | Average CIN in HullArea | J/kg |  | 0-180mb AGL |
| avgsbCIN | Average Surface-based CIN in HullArea | J/kg |  | sfc |
| minCIN | Maximum CIN in HullArea | J/kg |  | 0-180mb AGL |
| minsbCIN | Maximum Surface-based CIN in HullArea | J/kg |  | sfc |
| avgUSTM | Average U component of storm motion in HullArea | m/s |  | 0 - 6000m AGL |
| maxUSTM | Maximum U component of storm motion in HullArea | m/s |  | 0 - 6000m AGL |
| avgVSTM | Average V-wind component in HullArea | m/s |  | 0 - 6000m AGL |
| maxVSTM | Maximum V-wind component in HullArea | m/s |  | 0 - 6000m AGL |
| avgBS\_deep | Average Deep-Layer Bulk Shear in HullArea | m/s |  | sfc - 500 mb |
| maxBS\_deep | Maximum Deep-Layer Bulk Shear in HullArea | m/s |  | sfc - 500 mb |
| avgBS\_shallow | Average Shallow-Layer Bulk Shear in Hull Area | m/s |  | sfc - 850 mb |
| maxBS\_shallow | Maximum Shallow-Layer Bulk Shear in HullArea | m/s |  | sfc - 850 mb |
| avgRATIO | Average of CAPE divided by the absolute value of CIN in HullArea |  |  |  |
| avgSM | Average Storm Motion in HullArea | m/s |  | 0 - 6000m AGL |
| maxSM | Maximum Storm Motion in HullArea | m/s |  | 0 - 6000m AGL |
| minLCL | Minimum Lifted Condensation Level in HullArea | Pascals |  | cloud base |
| maxLCL | Maximum Lifted Condensation Level in HullArea | Pascals |  | cloud base |
| avgLCL | Average Lifted Condensation Level in HullArea | Pascals |  |  |
| PopDensyear | Year for the Population Density value |  | YYYY |  |
| avgPopDens | Average Population Density in HullArea | people per square km |  | Resolution: 2.5 arc-minute (~5km grid spacing) |
| maxPopDens | Maximum Population Density in HullArea | people per square km |  | Resolution: 2.5 arc-minute (~5km grid spacing) |
| totalPopDens | Total Population Density in HullArea | people per square km |  | Resolution: 2.5 arc-minute (~5km grid spacing) |
| Lon | Start Longitude |  |  |  |
| Lat | Start Latitude |  |  |  |
| totalPop | Total Population of Cities in HullArea | number of people |  |  |
| geometry | Spatial Extent of Tornadoes for the day | in Northing and Easting Coordinates |  |  |

**BigDayTornadoes**

This dataset includes every tornado that occurred in a Big Day (outbreak) with at least 6 tornadoes. The date range is between 1994 and 2022. There are 19,980 tornadoes that occurred on Big Days and 41 variables included in the data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Column Name*** | ***Explanation*** | ***Units*** | ***Format*** | ***Notes*** |
| om | Tornado Number in the Record |  |  |  |
| yr | Year |  |  |  |
| mo | Month |  |  |  |
| dy | Day |  |  |  |
| date | Date |  | yyyy-mm-dd |  |
| time | Time | CST | HH:MM:SS |  |
| tz | Timezone | CST |  | All times converted to 3 = CST |
| st | State |  |  | Two letter abbreviation |
| stf | State FIPS Number |  |  |  |
| stn | State Number |  |  |  |
| mag | Tornado Magnitude |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| inj | Number of Injuries |  |  |  |
| fat | Number of Fatalities |  |  |  |
| loss | Estimate property loss information |  |  | Categorization of tornado damage by dollar amount before 1996: 1<$50, 2 = $50-$500, 3 - $500-$5000, 4 = $5000-$50000, 5 = $50000-$500000, 6 = $500000-$5000000, 7 = $5000000-$50000000, 8 = $50000000-$500000000, 9 = $5000000000. After 1996, this is the property damage in millions of dollars. |
| closs | Estimate crop loss in millions of dollars |  |  | started in 2007 |
| elat | End Latitude | in decimal degrees |  |  |
| elon | End Longitude | in decimal degrees |  |  |
| len | Path Length | Miles |  |  |
| wid | Path Width | Yards |  |  |
| ns | Number of states affected by this tornadoes |  |  |  |
| sn | State Number totals | 1 or 0 |  | 1: Entire track information in this state |
| sg | Tornado Segment Number | 1, 2, or -9 |  | 1 = entire track information |
| f1 | 1st county FIPS code |  |  |  |
| f2 | 2nd county FIPS code |  |  |  |
| f3 | 3rd County FIPS code |  |  |  |
| f4 | 4th County FIPS code |  |  |  |
| fc | unaltered EF scale rating | 0 or 1 |  | 0: unaltered EF scale rating; 1: previous rating was -9 |
| DateTime | Date and Time |  | YYYY-MM-DD HH:MM:SS |  |
| Hour | Hour |  | HH |  |
| Year | Year |  | YYYY |  |
| cDateTime | Convective Date and Time |  | YYYY-MM-DD HH:MM:SS | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| cDateTime | Convective Date |  | YYYY-MM-DD | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| Length | Path Length | in meters |  |  |
| Width | Path Width | in meters |  |  |
| cas | Total injuries and Fatalities |  |  |  |
| AreaPath | Area of the tornado track | meters squared |  |  |
| Ma | Three letter month abbreviation |  |  |  |
| ED | Energy Dissapation | in Watts |  |  |
| groupNumber | Assigned group number |  |  |  |
| geometry | geometry of the start location | in northing and easting coordinates |  |  |
| ID | Identification Number |  | YYYYMMDDGN | Year-Month-Day-GroupNumber |

**Groups.sfdfT**

This dataset includes the groups created through the clustering algorithm. The date range is between 1994 and 2022. There are 7328 groups in total and 25 variables included in the data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Column Name*** | ***Explanation*** | ***Units*** | ***Format*** | ***Notes*** |
| groupNumber | Assigned group number |  |  |  |
| Year | Year |  |  |  |
| Month | Month |  |  |  |
| FirstDate | Start Date of the Outbreak |  | YYYY-MM-DD |  |
| LastDate | End Date of the Outbreak |  | YYYY-MM-DD |  |
| Name | Date Range |  | YYYY-MM-DD to YYYY-MM-DD |  |
| FirstcDate | First Convective Day of the Outbreak |  | YYYY-MM-DD |  |
| LastcDate | End Convective Day of the Outbreak |  | YYYY-MM-DD |  |
| ncD | Number of Convective Days |  |  |  |
| nT | number of tornadoes |  |  |  |
| n0 | number of tornadoes rated 0 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n1 | number of tornadoes rated 1 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n2 | number of tornadoes rated 2 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n3 | number of tornadoes rated 3 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n4 | number of tornadoes rated 4 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| n5 | number of tornadoes rated 5 |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| ATP | Accumulated Tornado Power | Watts |  | see Schroder 2020 |
| ATP\_Tw | Accumulated Tornado Power | TerraWatts |  | see Schroder 2020 |
| maxEF | Maximum Fujita Rating |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| nD | Number of Days |  |  |  |
| StartTime | Start Day and Time |  | YYYY-MM-DD HH:MM:SS |  |
| EndTime | End Day and Time |  | YYYY-MM-DD HH:MM:SS |  |
| Duration | Duration | in seconds |  |  |
| cas | Casualties: Number of injuries + fatalities |  |  |  |
| geometry | Spatial Extent of Tornadoes for the day | in Northing and Easting Coordinates |  |  |

**GroupTornadoes**

This dataset includes all tornadoes in the SPC reports between 1994 and 2022. There are 35,550 reports and 40 variables included in the data.

\*\*Same as All\_Tornadoes\*\*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Column Name*** | ***Explanation*** | ***Units*** | ***Format*** | ***Notes*** |
| om | Tornado Number in the Record |  |  |  |
| yr | Year |  |  |  |
| mo | Month |  |  |  |
| dy | Day |  |  |  |
| date | Date |  | yyyy-mm-dd |  |
| time | Time | CST | HH:MM:SS |  |
| tz | Timezone | CST |  | All times converted to 3 = CST |
| st | State |  |  | Two letter abbreviation |
| stf | State FIPS Number |  |  |  |
| stn | State Number |  |  |  |
| mag | Tornado Magnitude |  |  | 1950 - 2006: Fujita Scale; 2007 - present: Enhanced Fujita Scale |
| inj | Number of Injuries |  |  |  |
| fat | Number of Fatalities |  |  |  |
| loss | Estimate property loss information |  |  | Categorization of tornado damage by dollar amount before 1996: 1<$50, 2 = $50-$500, 3 - $500-$5000, 4 = $5000-$50000, 5 = $50000-$500000, 6 = $500000-$5000000, 7 = $5000000-$50000000, 8 = $50000000-$500000000, 9 = $5000000000. After 1996, this is the property damage in millions of dollars. |
| closs | Estimate crop loss in millions of dollars |  |  | started in 2007 |
| elat | End Latitude | in decimal degrees |  |  |
| elon | End Longitude | in decimal degrees |  |  |
| len | Path Length | Miles |  |  |
| wid | Path Width | Yards |  |  |
| ns | Number of states affected by this tornadoes |  |  |  |
| sn | State Number totals | 1 or 0 |  | 1: Entire track information in this state |
| sg | Tornado Segment Number | 1, 2, or -9 |  | 1 = entire track information |
| f1 | 1st county FIPS code |  |  |  |
| f2 | 2nd county FIPS code |  |  |  |
| f3 | 3rd County FIPS code |  |  |  |
| f4 | 4th County FIPS code |  |  |  |
| fc | unaltered EF scale rating | 0 or 1 |  | 0: unaltered EF scale rating; 1: previous rating was -9 |
| DateTime | Date and Time |  | YYYY-MM-DD HH:MM:SS |  |
| Hour | Hour |  | HH |  |
| Year | Year |  | YYYY |  |
| cDateTime | Convective Date and Time |  | YYYY-MM-DD HH:MM:SS | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| cDate | Convective Date |  | YYYY-MM-DD | 24 hour period from 6AM to 6AM the next day. See Doswell 2006. |
| Length | Path Length | in meters |  |  |
| Width | Path Width | in meters |  |  |
| cas | Casualties: Total injuries and Fatalities |  |  |  |
| AreaPath | Area of the tornado track | meters squared |  |  |
| Ma | Three letter month abbreviation |  |  |  |
| ED | Energy Dissapation | in Watts |  |  |
| groupNumber | Assigned group number |  |  |  |
| geometry | geometry of the start location | in northing and easting coordinates |  |  |