

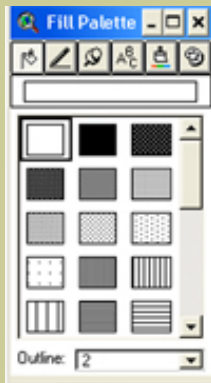


Rocky Mountain Mapping Center

Analyzing Tornadoes Across the USA With GIS - Answer Key

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- 1) [ESRI]
- 2) [National Climatic Data Center (NCDC), National Oceanic and Atmospheric Administration (NOAA), Asheville, NC]
- 3) [31,997]
- 4) [1950 - 1990]
- 5) [PATH_WDTH]
- 6) [FUJITA]
- 7) [YRMO - Four character value representing year and month of the touchdown]
- 8) [TIME_U - Military time, (0000 to 2400)]
- 9) [TORNADOES.dbf 7,469 KB]
- 10) [It is the I - This file contains information about tornados, and many attributes exist in the table.]
- 11) [21]
- 12) [4 - These files are the "G" part of GIS; the map of tornados.]
- 13) [.apr - A Project file.]



14)

[Double click on the theme name to bring up the Legend Editor. In the Legend Editor, double click on the symbol box to bring up the Fill Palette. Select the upper left box to make the states transparent. Then select 2 from the outline field to change the thickness to 2. Click on the Apply key to see the changes.]

- 15) **[Single Symbol]**
- 16) **[Latitude - Longitude Geographic]**
- 17) **[different]**
- 18) **[Kansas]**
- 19) **[31,997 - They are the same.]**
- 20) **[Tornados occur in just about every state. Fewer tornados occur in the western United States. Most tornados occurred in the Great Plains, Midwest, and Southern States. The New England states saw some tornado activity.]**
- 21) **[While there are fewer tornados in the west compared to the midwest, tornados still do occur in the Mountain States. They also occur along the coasts.]**
- 22) **[There are very few class 5 tornados. Class 5 tornados are all east of the Rocky Mountains.]**
- 23) **[The longest tornados are located in the Great Plain States. Most tornados have short track widths.]**
- 24) **[Michigan]**
- 25) **[116]**
- 26) **[8 June 1953 at 19:30 hours or 7:30 pm]**
- 27) **[Texas]**
- 28) **[Injuries = 1,700 / Fatalities = 42]**
- 29) **[10 April 1979 at 17:55 hours or 5:55 pm]**
- 30) **[You are creating a smaller subset of those tornados that have a Fujita rating greater or equal to 2. A total of 9,858 tornados have been selected.]**
- 31) **[Colorado and Indiana appear not to have any severe tornados. Upon close examination, the Fujita scale for both states is -99 throughout--missing data.]**
- 32) **[48]**
- 33) **[Texas]**
- 34) **[Rhode Island - 7 tornados]**
- 35) **[956]**

- 36) **[Alaska and Hawaii because they did not have any tornados.]**
- 37) **[May]**
- 38) **[January]**
- 39) **[August]**
- 40) **[4,660 - You just created a new Shapefile that only contains tornados that occurred in April.]**
- 41) **[layout plotted]**
- 42) **[True - By looking at the data from 1950 to 1990 no fatalities occurred in Utah.]**
- 43) **[In the Themes Properties run a query to find all tornados that occurred in Utah which is state code 49. Then sort the fatalities field in descending order to see if any people had died in previous tornados in Utah. You can find the state code for Utah by doing an identify on the states.shp file.]**
- 44) **[51]**
- 45) **[Do a descending sort on the injuries field to show how many injuries occurred. Then go over and look at the dates for those tornados that had an injury. A total of 3 tornados had one injury each in 1968, 1970, and 1990]**
- 46) **[Each elevation category.]**
- 47) **[No]**
- 48) **[Id, Gridcode, Area]**
- 49) **[The zone that has the highest number of tornados.]**
- 50) **[Chart printed]**
- 51) **[Category 5: 400 to 800 meters in elevation]**
- 52) Which elevation category had the least tornadoes? What is the elevation of this category?
[Category 1 - 80 feet below sea level to sea level]
- 53) **[Yes. Medium-low elevations contain the most tornadoes.]**
- 54) **[Analysis and Surface menus are added to the Tool bar.]**
- 55) **[The new grid covers a larger area than the Tornadoes Grid. Unable to access the table since the numbers are floating point. The Fujita numbers are unknown; many of the tornados have -99, missing data.]**
- 56) **[The new grid needed to be a square so other areas were also selected.]**

- 57) [**The data for some tornados is missing.**]
- 58) [**The Fujita data is missing in Colorado.**]
- 59) [**11,702 were selected.**]
- 60) [**Most of the tornados in the central states have a Fujita rating greater than 0. The higher Fujita values are in the Southern central states.**]
- 61) [**Texas , Oklahoma, Kansas**]
- 62) [**Western half of Texas.**]
- 63) [**Kansas**]
- 64) [**It made a huge "bulls eye", or "target" because of this high value.**]
- 65) [**Tornados most often occur in the Midwest and Southern States. More tornados occur at mid to low elevations than higher elevations. More tornados occur East of the Rocky Mountains. Tornados can occur in any state, and inland or along the coasts.**]
- 66) [**Rasters provide a useful way to show how a phenomena can be mapped over a continuous area.**]

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Maintainer: webmaster@rockyweb.cr.usgs.gov

URL: http://rockyweb.cr.usgs.gov/outreach/sgu/tornadolesson_answers.html

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