

# PACARC's Changing Mission

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# PACARC's Mission Statement

*The mission of the Palestine/Anderson County Amateur Radio Club is to provide emergency communications services to the community; to assist other civic organizations; to promote the technical craft of amateur radio through class training and testing; to mentor new members; and enhance fellowship among radio amateurs.*

# The Post 9/11 World

- Continuity of Government is the focus
- Plenty of money available for governments to become more resilient to disasters
  - Redundant communications systems
  - Backup generators
- Less need for Ham Radio “when all else fails”
- Less focus on civilians

**You are on your own for the first 72 hours**

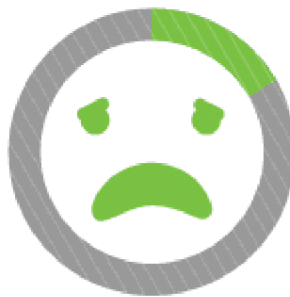
# Civilians use Cell Phones



## HOW DID YOU FEEL WHEN YOU MISPLACED YOUR PHONE?



73%  
PANICKED



14%  
DESPERATE



7%  
SICK



6%  
RELIEVED





# Threats to Civilian Communication

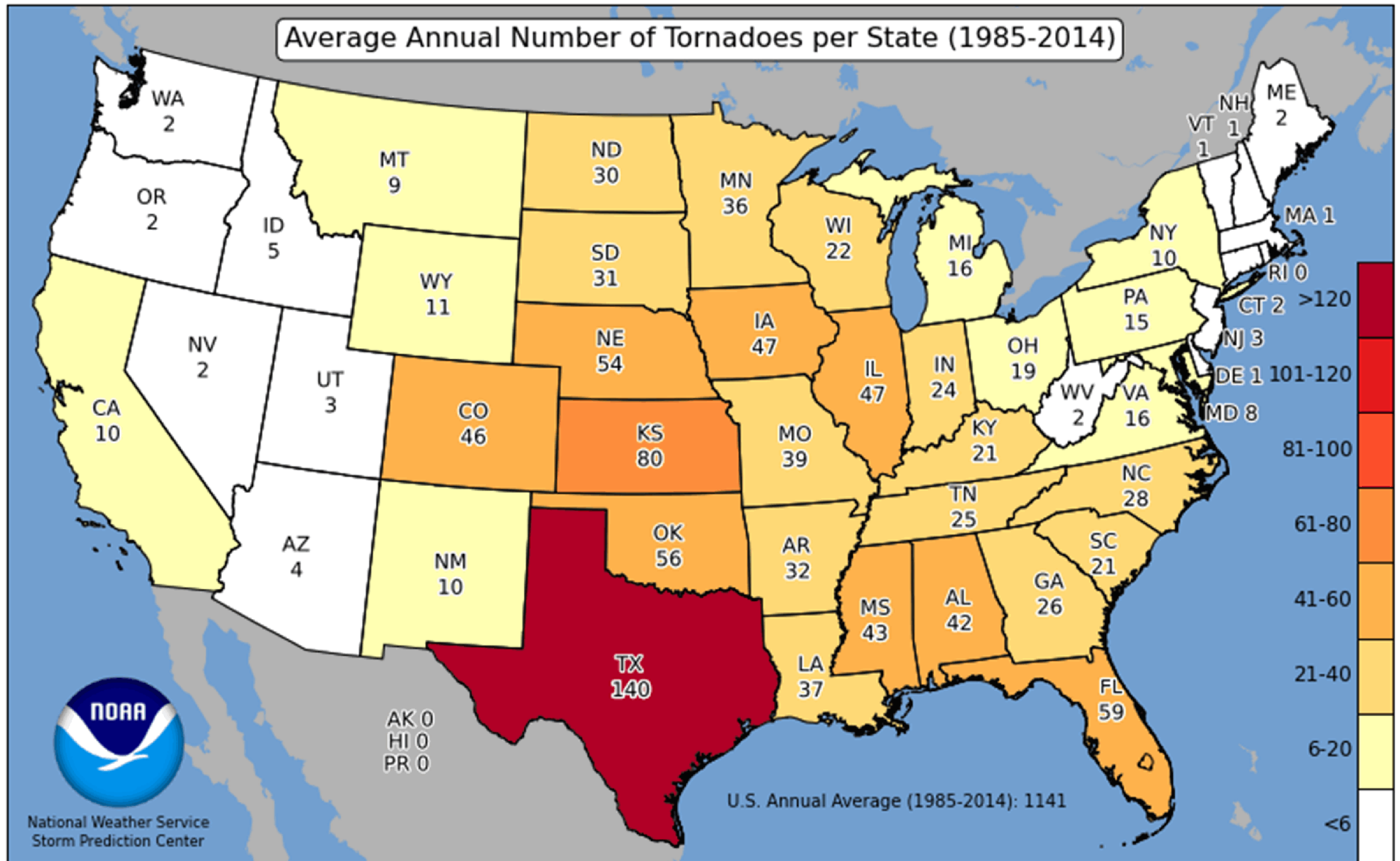
- Loss of electrical power
- Loss of cell towers
- System overload



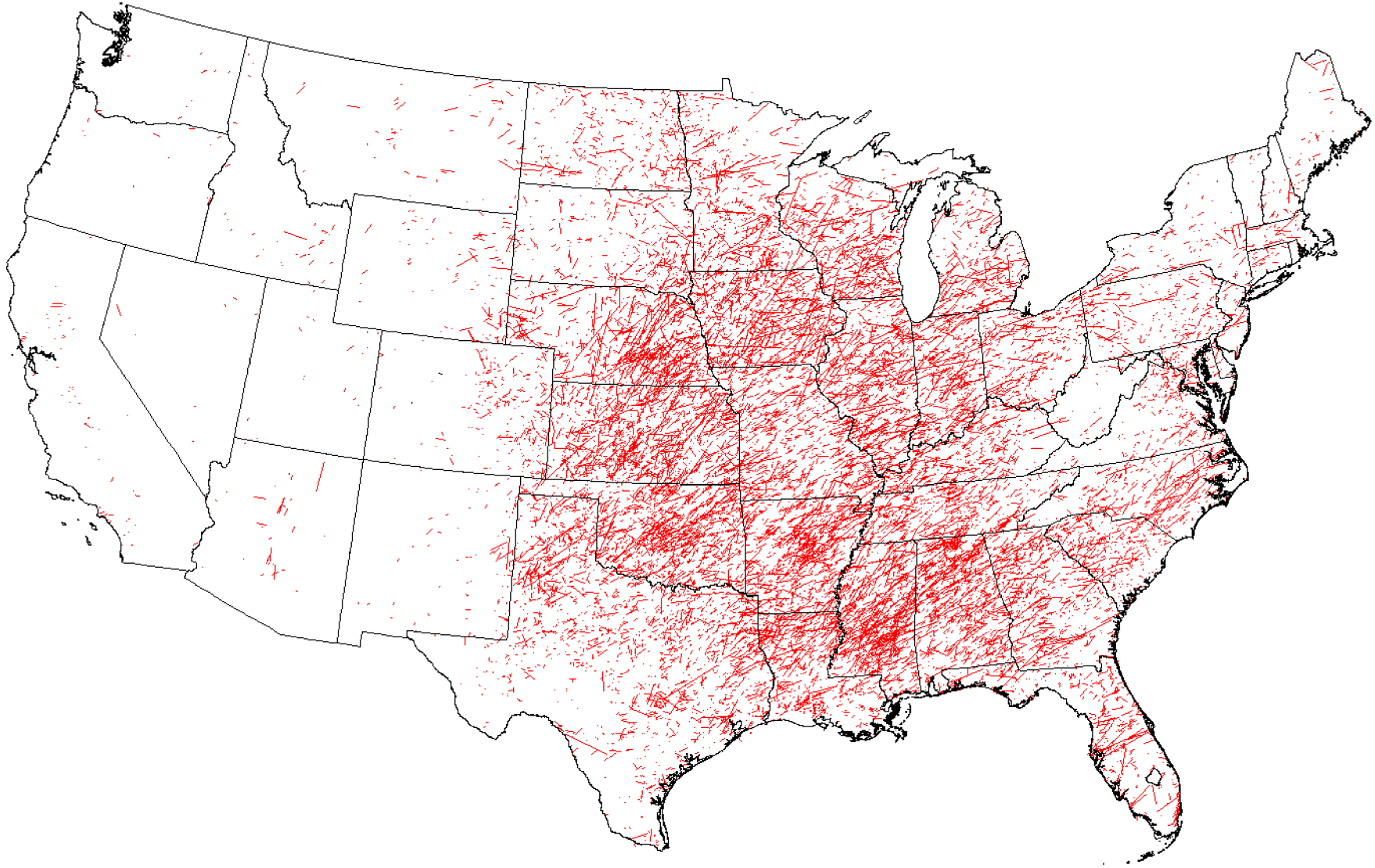
# Disasters Cause All Three

- Natural
  - Tornadoes
  - Hurricanes
  - Wildfires
  - Earthquakes
  - Solar Storms
- Man-made
  - Terrorist attack

# Average Annual Number of Tornadoes per State



# Tornado Tracks (1985 – 2014)

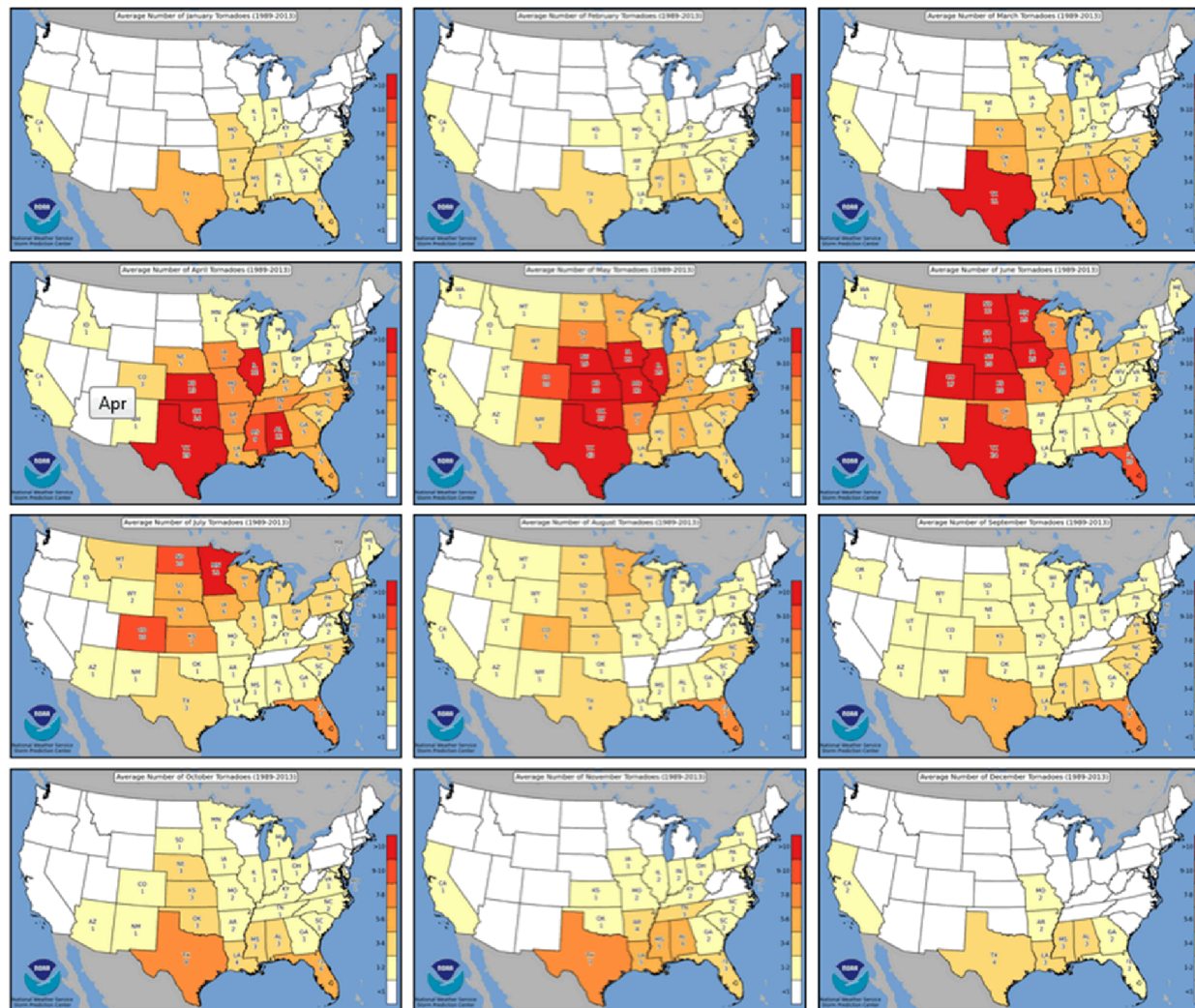




# Tornado Threat by Month

25-Year Average Number of Tornadoes per State by Month (All tornadoes, 1989-2013)

*Mouse over image to see month. Click on image for full resolution map.*



[Back to Storm Prediction Center WCM page](#)

# Texas Tornado Facts (1950 to 2014)

- 8,247 tornadoes
  - Six F5 (<0.1%)
  - 47 F4 (0.6%)
  - 299 F3 (3.6%)
  - 1,157 F2 (14%)
  - 2,275 F1 (28%)
  - 4,252 F0 (52%)
  - 211 F? (2.6%)
- 562 people killed
- 8,487 people injured



F2 tornado in Lancaster, Texas on April 3, 2012

# Deadliest East Texas Tornadoes

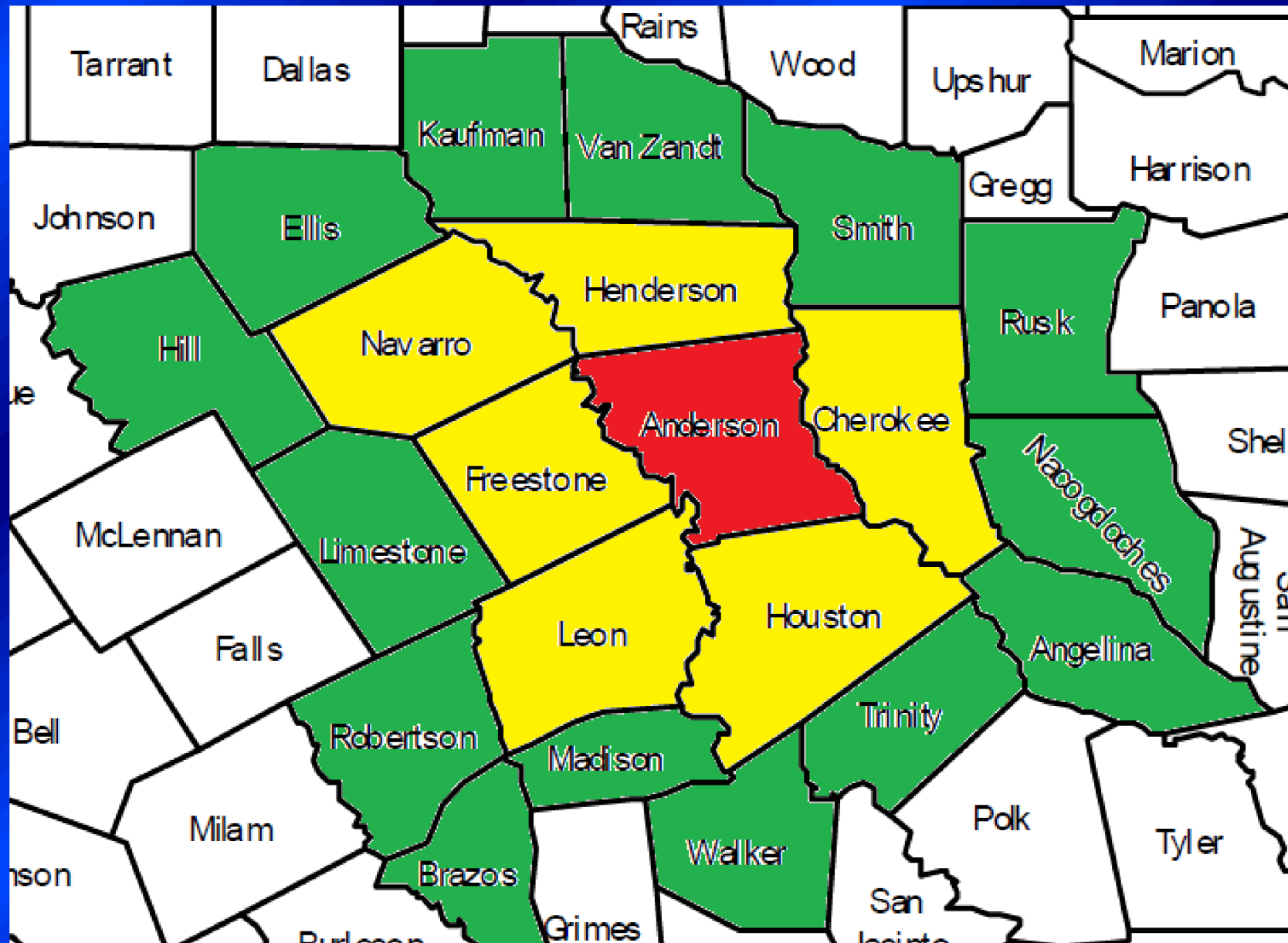
- 05/06/1930 - F4 - Hill/Navarro/Ellis - 41 killed
- 04/09/1919 - F4 - Henderson/Van Zandt - 17 killed
- 01/04/1946 - F4 - **Anderson** - 15 killed
- 03/30/1933 - F3 - Angelina/Nacogdoches - 13 killed
- 02/08/1935 - F2 - Leon/Houston - 12 killed

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- 05/10/2015 - F3 - Van Zandt - 2 killed
- 11/15/1987 - F3 - **Anderson** - 1 killed

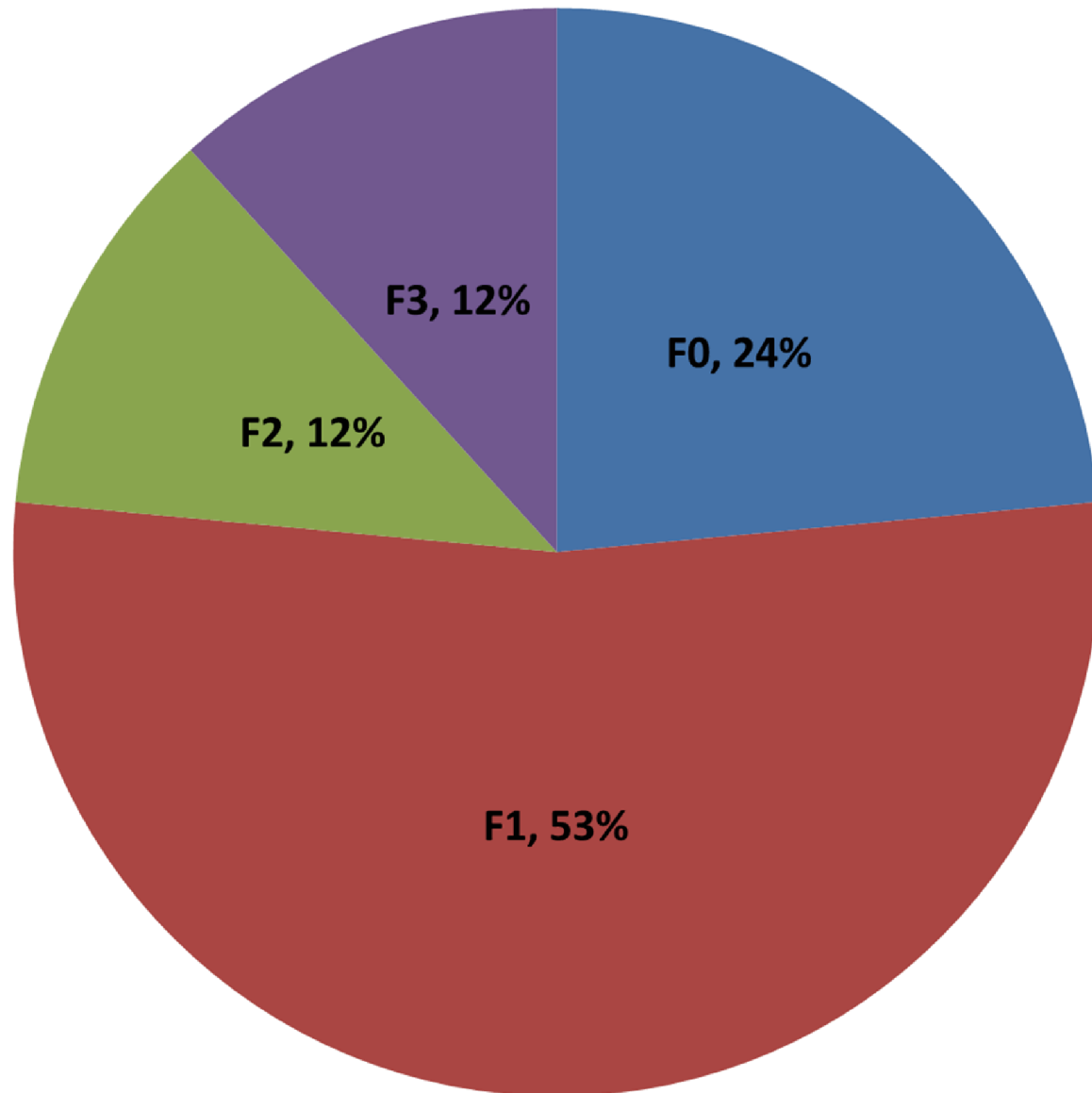


# East Texas Counties



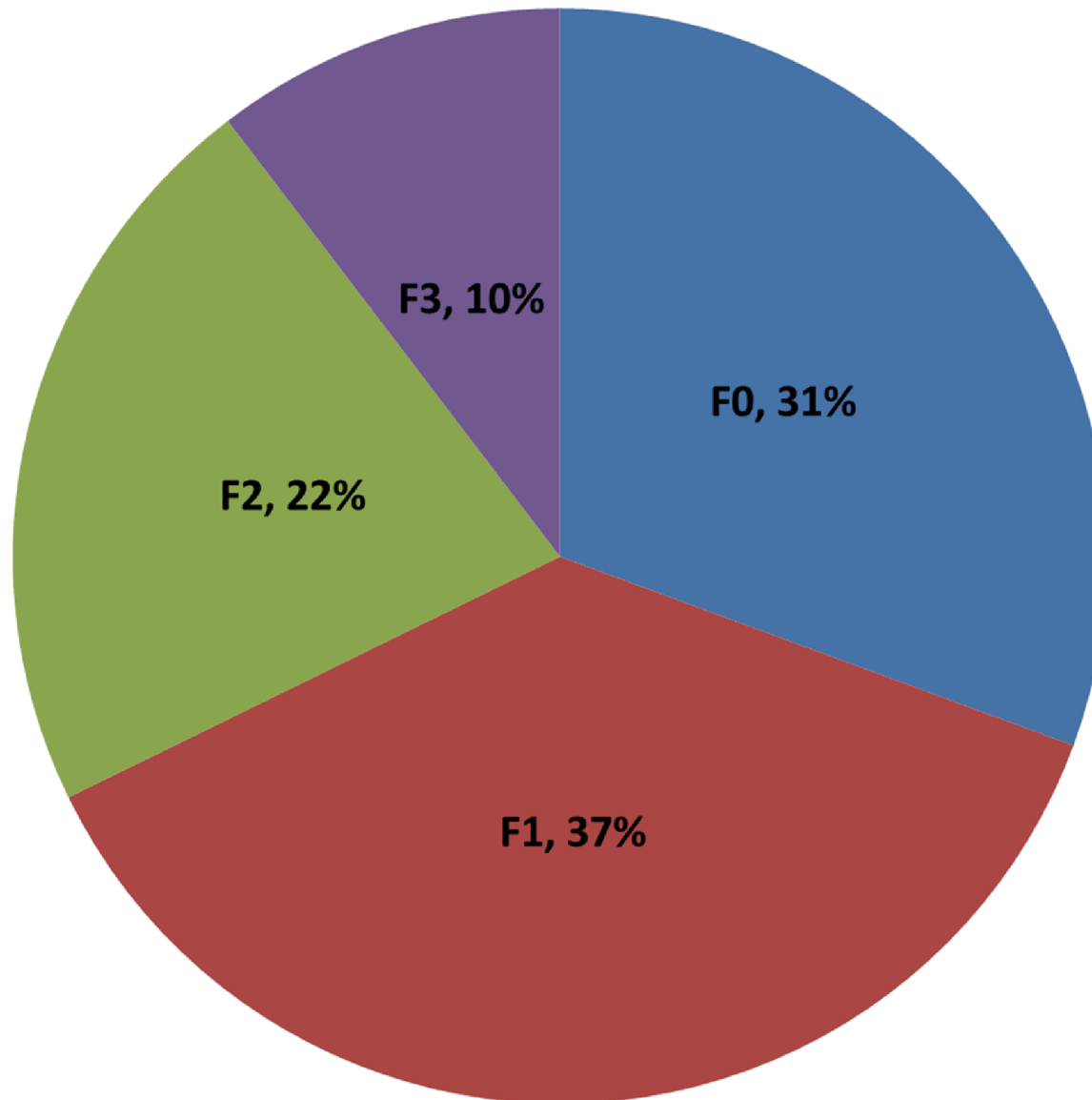
# Anderson County

Averages one tornado every two years



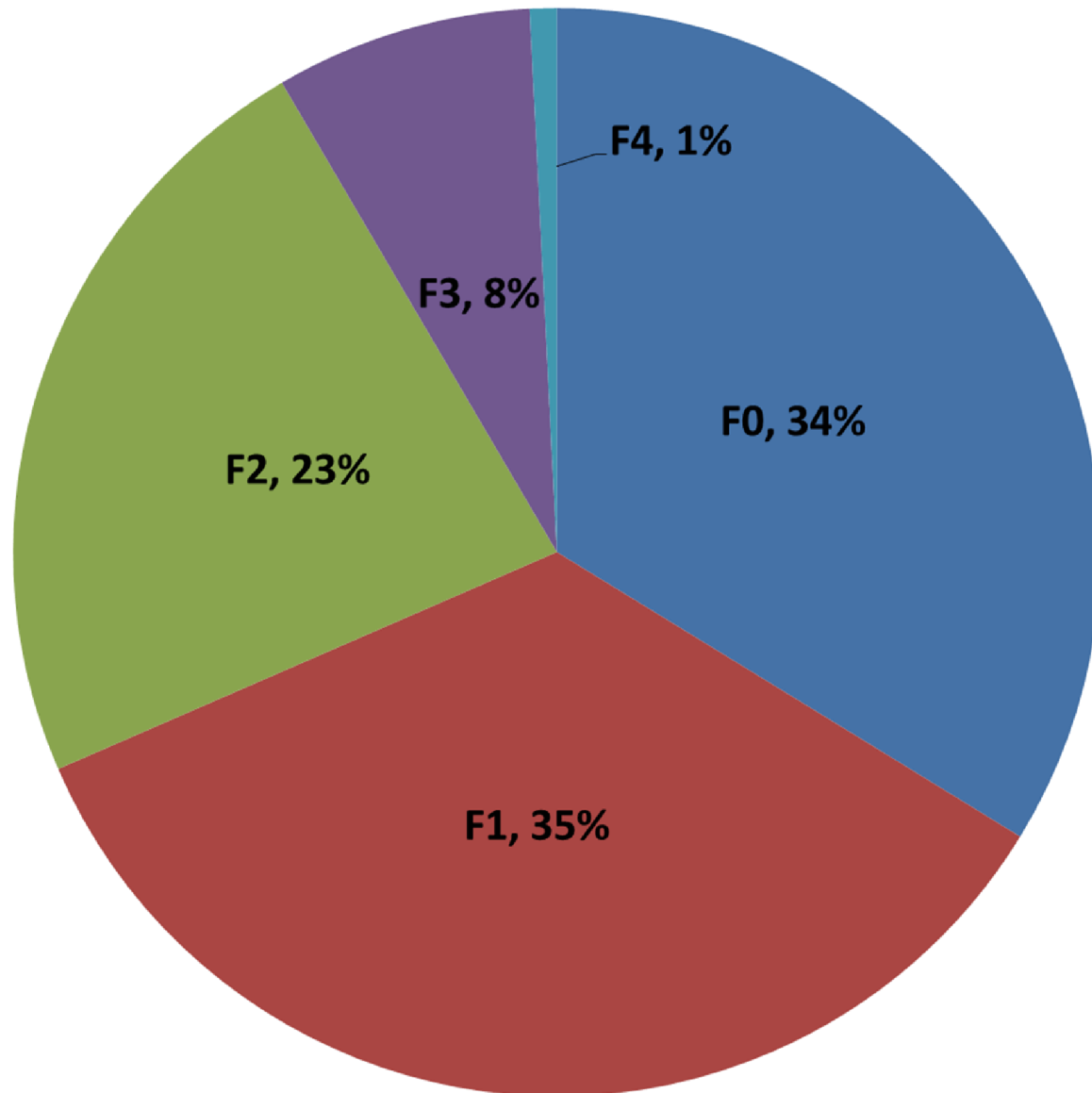
# Anderson +1 neighboring county

Averages three tornadoes every year



# Anderson +2 neighboring counties

Averages ten tornadoes every year

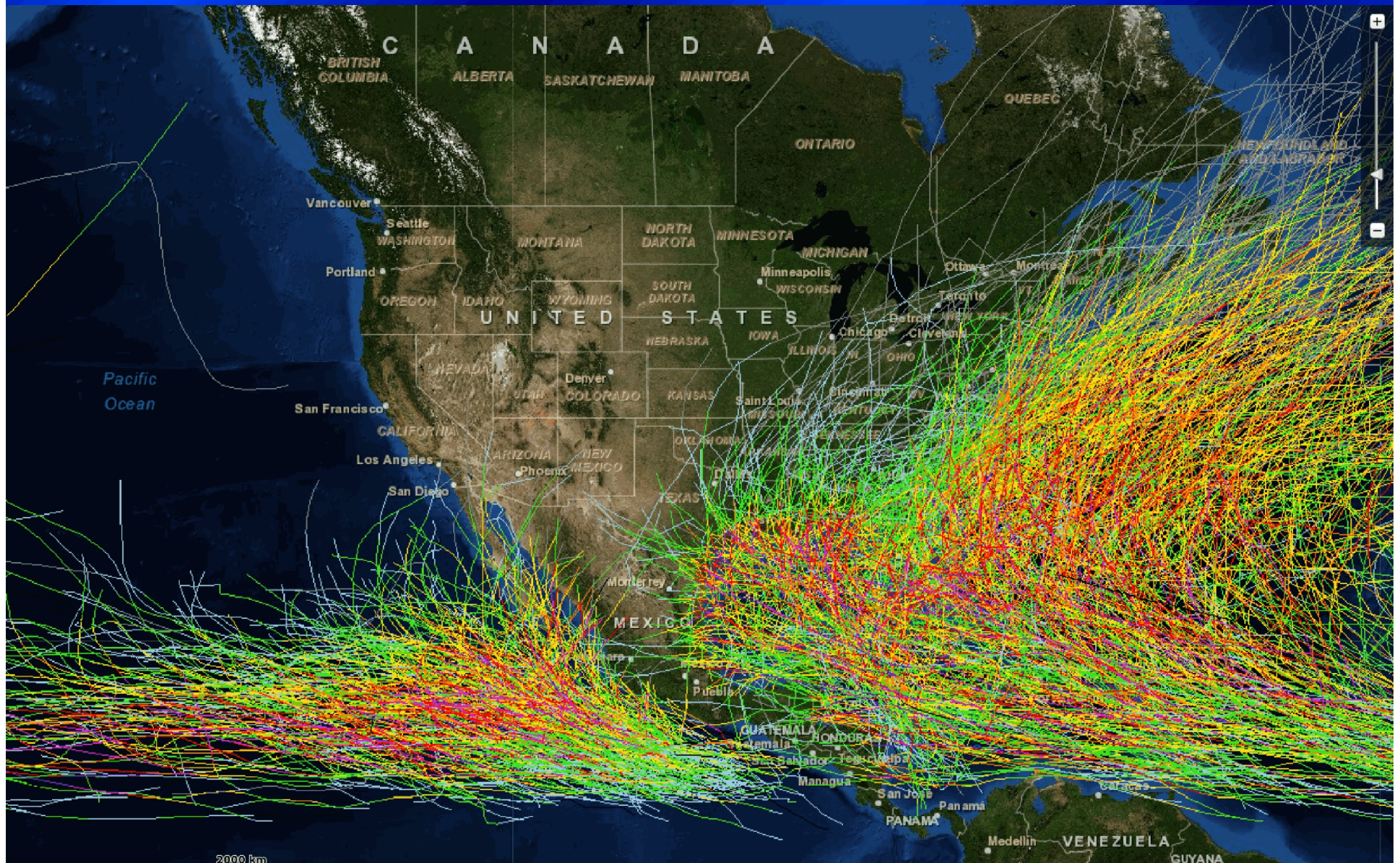


# Spring/2015 East Texas Tornadoes

- Apr 9 – F2 – Cherokee
- Apr 24 – F0 – Ellis
- Apr 26 – F0 – Hill
- May 10 – F? – Hill
- May 10 – F1 – Smith
- May 10 – F1 – Smith
- May 10 – F3 – Van Zandt (2 killed, 47 injured, \$40 M)
- May 11 – F1 – Cherokee
- May 19 – F0 – Ellis
- May 25 – F2 – Rusk (15 homes destroyed, 250 damaged)



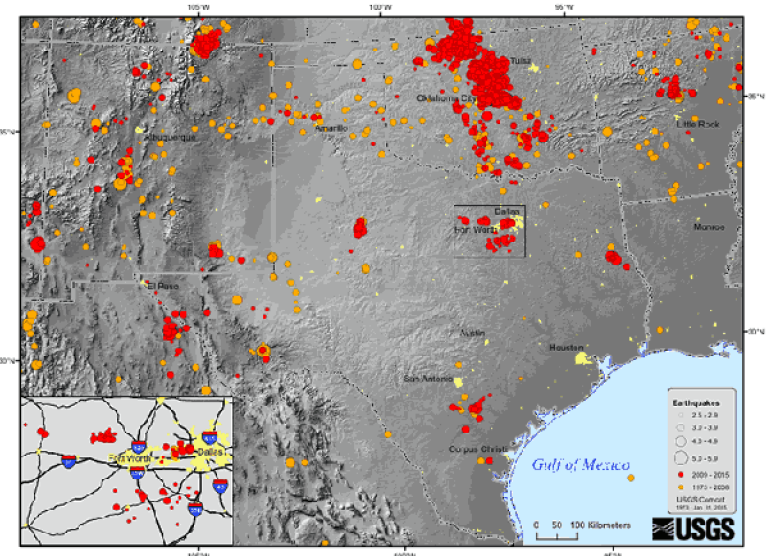
# Hurricane Tracks 1958 - 2011





# Other Disasters

- Wildfires
  - 09/04/2011 Bastrop County
    - 1,673 homes destroyed
    - 2 people killed
    - \$325 million damage
- Earthquakes
  - Nacogdoches:
    - 9 quakes in last 3 years
    - Largest 4.8 on 05/17/2012





# “Provide emergency communications services to the community”

- Instead of focusing on providing emergency communications to local government organizations, let's change our focus to providing emergency communications to civilians in our community

# Emergency Communications Trailer



# Civilian Communication Functions

- Satellite/Local TV reception (e.g. DISH/Direct TV)
  - Outdoor television display with speakers
- Satellite Internet (e.g. Exede/Hughes)
  - Voice Over Internet Protocol (e.g. Vonage/Ooma)
  - WiFi hot spot
    - Video conferencing (e.g. Skype/Facetime)
    - Send/receive e-mails (e.g. Outlook/Gmail)
    - Web browsing (e.g. Firefox/Internet Explorer)
    - Smart phone apps (e.g. iOS//Android/Windows)
- Low power FM broadcasting
- Electrical recharging station

# Operator Communication Functions

- Amateur Radio
  - HF: 80m/40m NVIS regional
  - VHF/UHF: 2m/70cm local
- Scanner
  - Police
  - Fire
  - Local disaster response
- Weather Alert
- Public address system
- Low power FM broadcasting
- Laser printer (Flyers, bulletins, etc.)

# Emergency Response Timeline

- 00:00 – Disaster event occurs
- 03:00 – Local emergency officials determine need for emergency communications trailer
- 04:00 – Emergency communications operators gather for travel to disaster site
- 06:00 – Emergency communications operators arrive at disaster site
- Plan for a maximum of one week deployment

# Emergency Communications Team

- In Transit:
  - Driver
  - Navigator
  - Communicator
- On Scene:
  - Three offset shifts, providing for:
    - One 8-hour block of sleep
    - Five 2-hour work blocks
    - Six 1-hour meals/breaks
    - Always 1 or 2 operators on duty

Time	Op #1	Op #2	Op #3
12:00 AM	Sleep		
1:00 AM	Sleep		Break
2:00 AM	Sleep	Dinner	
3:00 AM	Sleep		
4:00 AM	Sleep		Lunch
5:00 AM	Sleep	Break	
6:00 AM	Breakfast	Sleep	
7:00 AM		Sleep	Break
8:00 AM		Sleep	
9:00 AM	Break	Sleep	
10:00 AM		Sleep	Dinner
11:00 AM		Sleep	
12:00 PM	Lunch	Sleep	
1:00 PM		Sleep	Break
2:00 PM		Breakfast	Sleep
3:00 PM	Break		Sleep
4:00 PM			Sleep
5:00 PM		Break	Sleep
6:00 PM	Dinner		Sleep
7:00 PM			Sleep
8:00 PM		Lunch	Sleep
9:00 PM	Break		Sleep
10:00 PM	Sleep		Breakfast
11:00 PM	Sleep	Break	

# Disaster Site Set Up Tasks

- Tent
- Porta Potty
- Emergency Power (Generator/Solar Panels?)
- Antenna
- Television
- Tables
- Awning



# Funding Sources

- Civic organizations (K of C, Rotarians, etc.)
- Private businesses (Walmart, etc.)
- Other amateur radio clubs
- Government grants?
- Others?

# The Next Steps

- Establish a committee to:
  - Specify equipment
  - Estimate costs
  - Determine deployment protocol
  - Establish project timeline
- Committee reports to PACARC for approval

Questions?