

February 1998 Central Florida Tornado Outbreak 20th Anniversary

The most devastating tornado outbreak in Florida's history occurred during the late night and early morning hours of February 22-23, 1998. A total of seven significant tornadoes were confirmed between 10:55 p.m. and 2:30 a.m., resulting in 42 fatalities and more than 260 injuries. The majority of the damage and all the fatalities were caused by four unusually long-lived tornadoes, which primarily impacted South Daytona, Winter Garden, Sanford, and Kissimmee. The supercell thunderstorms that produced these tornadoes were powerful and cyclic in nature, with tornado damage tracks ranging from 8 to 38 miles. One factor that made this a particularly deadly event was that it occurred overnight when many residents were asleep. In the past, the only method for citizens to receive a National Weather Service (NWS) tornado warning while asleep was via a tone-alerted NOAA Weather Radio. Today, most residents receive tornado warnings automatically on their personal cell phones through the Wireless Emergency Alert (WEA) system, providing a final opportunity to move to a more secure location (i.e. a small, interior room on the lowest floor of a home – away from windows).



While several outbreaks of strong and violent tornadoes have been documented in Central Florida over the past 120 years, the number of fatalities resulting from the February 1998 outbreak was unprecedented. In fact, the second deadliest tornado outbreak in Florida's history, the 2007 "Groundhog Day" event, resulted in 21 fatalities. The more recent event produced half as many tornadoes as during 1998, and the tornadoes affected a rural, low population area within Lake and Volusia Counties, compared with the highly populated Orlando suburbs which experienced the 1998 tornadoes.

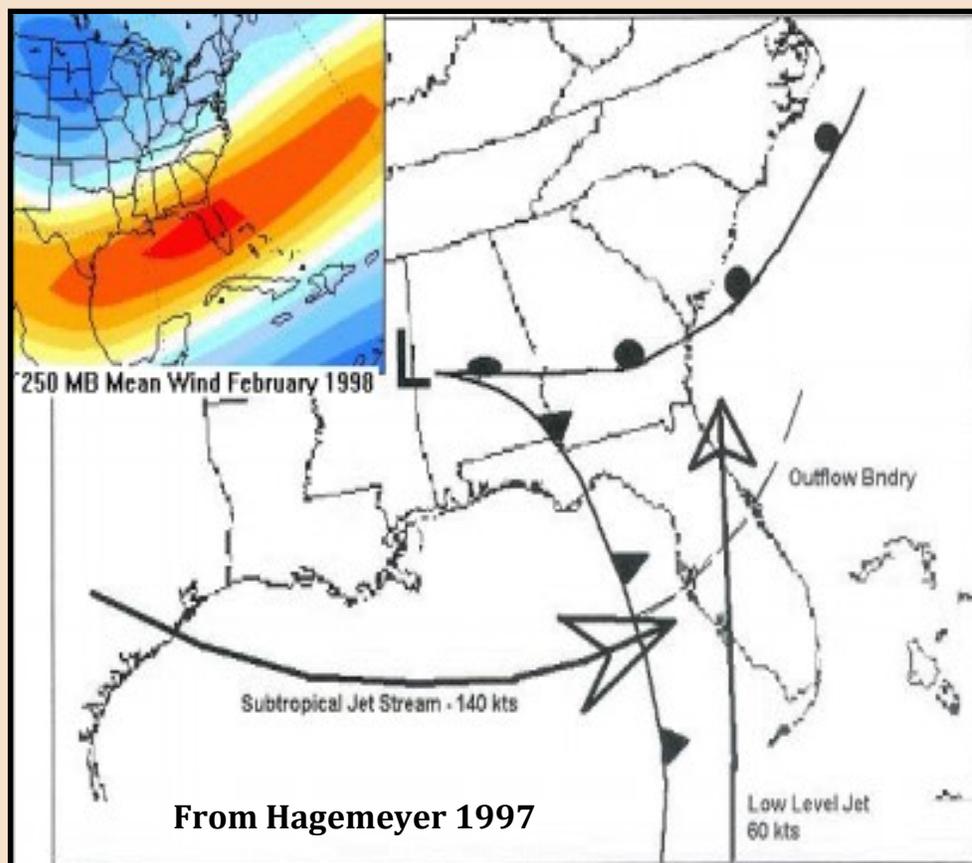
Still, accurate severe weather forecasts issued days in advance and tornado warnings provided with significant lead times, combined with highly visible messaging of the tornado threat by NWS Melbourne staff and the Orlando media likely help prevent additional fatalities and injuries. The effects of this outbreak are still being felt 20 years later by a tornado-savvy public, many of whom still live in the area and vividly recall the events of that fateful night.



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Meteorological Conditions



Meteorologists at the National Weather Service in Melbourne realized well in advance that there would be a much greater than normal probability of an active severe weather season in the spring of 1998 due to the presence of a strong El Niño throughout the winter and spring of 1997-1998. During El Niño events, the subtropical jet stream (as indicated in the figure below) occasionally shifts much further south than normal, overlaying the Florida peninsula, with greater wind speeds than normal. This in turn increases the vertical wind shear over portions of Florida, creating an environment favorable for strong to violent tornadoes.

The ideal meteorological set-up capable of producing and sustaining tornadic supercell thunderstorms was in place over the Florida peninsula on the night of February 22, 1998. A strong upper-level weather disturbance associated with 160 mph jet stream winds approached the Florida peninsula from the west. At ground level, a low pressure system moved across the Southeast U.S. as an associated cold front approached Florida from the Gulf of Mexico and a warm front developed north of Florida. After nightfall, lower-level wind increased to more than 55 mph just above ground level. Together, these parameters resulted in an unusually warm, moist and unstable environment across Central Florida, together with extreme wind shear – prime conditions for a historic tornado outbreak.

During a 5-hour period from late on February 22 into the early morning hours of February 23, NWS Melbourne meteorologists issued 14 tornado warnings. All 7 tornadoes were preceded by tornado warnings, with an average lead time of 15-minutes (typical lead-time nationwide averaged 13-minutes). The four tornadoes that resulted in fatalities had an average lead time of 23-minutes.

- [Additional information about 1998 Central Florida Tornado Outbreak](#)
- [Tornado Safety Information](#)
- [Weather Emergency Alerts \(WEA\) via cell phones](#)
- [An additional way to receive emergency alerts in your community](#)



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RV Park in Kissimmee



RV Park in Kissimmee

FLORIDA TODAY
PUBLISHED IN BREVARD COUNTY

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■ STORM'S PATH, 7A ■ BREVARD DAMAGE, 8A ■ OSCEOLA RAVAGED, 9A

DEVASTATION

38 dead, hundreds hurt in onslaught of tornadoes

Damages estimated at more than \$37 million

FLORIDA TODAY Staff and Wire reports

Victims of a windswept Armadogodon.

An 18-month-old Osceola County toddler sucked from the arms of her father. A 16-year-old girl pulled out the window of her home and thrown 150 feet. A pickup stuck into the living room of a home as effortlessly as a needle into a pin cushion.

Those were just a few of the harrowing scenes from a swarm of tornadoes unusual in strength and duration that ravaged Central Florida in the wee hours of Monday morning.

When the last of the six to 10 twisters swept through, at least 38 people were dead and more than 250 injured in Osceola, Orange, Volusia and Seminole counties.

Preliminary damage estimates are more than \$37 million.

"It was so loud, so fast," said Hilda Perez of Sanford in Seminole County, about 20 miles northeast of Orlando. "It sounded like a bomb exploding."

It was the most deadly tornado outbreak to strike Florida in a half-century of record-keeping, the National Weather Service said. And it was the deadliest day since Hurricane Andrew hit the Bahamas, South Florida and Louisiana in 1992, killing 32 people and becoming the nation's most expensive natural disaster.

The level of devastation I saw here is equal to Hurricane Andrew, even if in a more narrow area, Osceola Fire Chief Jeff Hall said. The series of tornadoes struck just before midnight Sunday, hit

Counties hit

Chris Bailey, FLORIDA TODAY

ABOVE: Recreational vehicles lie on their sides amid the ruins of Ponderosa RV Park in Kissimmee. The motor homes were destroyed.



Kissimmee



Kissimmee



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RV Park in Kissimmee



Kissimmee



Kissimmee