SOUTHEAST REGIONAL CLIMATE CENTER

Southern AER

ATMOSPHERIC EDUCATION RESOURCE

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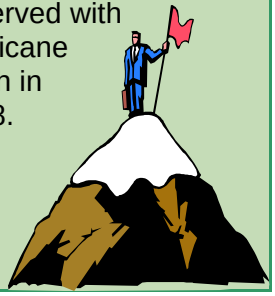
In This Issue:

Did You Know?

The highest wind speed ever recorded anywhere on earth was observed on the summit of Mt. Washington, NH on April 12, 1934. A peak gust of 231 mph was reported--that's more than 50 mph higher than the highest wind speeds observed with Hurricane Mitch in 1998.



Hurricane Andrew Gains Strength After Ten Years

After ten years, Hurricane Andrew has been reclassified and is now considered to have been a category five hurricane. Hurricane Andrew hit south Florida in August of 1992, becoming the costliest hurricane on record with over $26 billion worth of damages*.

Andrew is now one of three category five storms to hit the continental United States along with the "Florida Keys 1935 Hurricane" and Hurricane Camille of 1969. Hurricane Andrew was directly responsible for 23 deaths in Louisiana and Florida.

The reclassification of Andrew is part of a larger project by the National Hurricane Center Best Track Committee to review the history of each storm so there will be an accurate record of its history. "We have recently completed a review of a re-analysis of storms from 1851 to 1910," said Colin McAdie, the chairman of the National Hurricane Center's Best Track Committee.

The understanding of winds during strong hurricanes has grown significantly since 1992, according to McAdie. Since 1997, dropwindsondes, a type of weather instrumentation, have been put to use, measuring weather conditions every 15 feet while traveling through the eyewall of the hurricane, the windiest part of the storm. Now it is estimated that the winds in the hurricane are about 90 percent of the wind speeds taken from aircraft 10,000 feet. In 1992, it was thought that the strongest winds in the storm were 75 to 80 percent of those measured at 10,000 feet, dwarfing the wind speed estimates.

During Andrew, the severe weather conditions knocked out weather instrumentation. The remaining wind measurements, satellite and radar imagery, and the destruction were used to estimate the wind speeds. Now, a better understanding of severe hurricanes has allowed for a more accurate picture of what type of storm it really was.

*According the National Climatic Data Center web page of costliest hurricanes: http://www.nhc.noaa.gov/pastcost.html

Being In The Know

Hurricane Watch	Hurricane Warning
Indicates that the conditions are ideal for a hurricane to occur	Indicates that a hurricane is definitely going to happen or is in the process of occurring

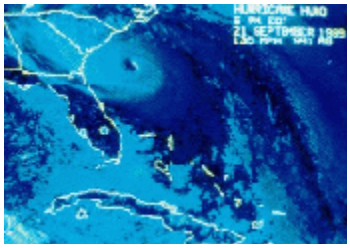
The Big One: Hurricane Name Retirement

Storms weren't even named until World War II. Before then, storms were referenced by their latitude and longitude. This became quite confusing, so during World War II the U.S. Navy started naming them.

Storms are named using a list that runs for six years. Each year starts with the next "A" name and goes alphabetically through the end of the season. Male names were added in 1978 to the six-year rotating list of names. miles an hour are named.

Storms that exceed 39 but only the storms that cause great destruction are removed from the list. These names are said to be "retired." There will never be another Hurricane Andrew, never another Hurricane Opal.

To find a complete list of "retired" Atlantic hurricane names, got to http://www.aoml.noaa.gov/general/lib/retiram.html



There will never be another Hurricane Hugo.

The Saffir-Simpson Scale: Measuring Up

All hurricanes can cause damage to property and loss of lives. The degree of destruction is related to the wind speeds during the storm and its storm surge. The storm surge is the rise in sea level due to a hurricane or another intense storm. Knowing how much damage and flooding is expected can help people make preparations.

To try and predict damage, the Saffir-Simpson Scale was created in 1969. The creators were Herbert Saffir and Dr. Bob Simpson, who was the director of the National Hurricane Center at the time.

The World Meteorological Organization had written a report that discussed the relationship between windstorms and property damage. Dr. Simpson added storm surge data to this report.

In the Saffir-Simpson scale, the wind speeds are the determining factor since flooding is so dependant on the slope of the land.

The Saffir-Simpson scale is used to predict potential damage by hurricanes. By being able to predict the amount of damage, people are able to prepare for the flooding and winds to come.

Saffir-Simpson Hurricane Scale

Category	Pressure	Wind Speed		Storm Surge		Damage
	mb	kph	mph	m	ft	
1	=980	119-153	74-95	1-2	4-5	Minimal
2	965-979	154-177	96-110	2-3	6-8	Moderate
3	945-964	178-209	111-130	3-4	9-12	Extensive
4	920-944	210-250	131-155	4-6	13-18	Extreme
5	<920	>250	>155	>6	>18	Catastrophic

FunFacts!

- The term 'hurricane' is derived from Huracan, a Carib god of evil.
- The National Weather Service issues a wind advisory when sustained wind speeds of 30 mph or higher or gusts of 40 mph or higher are expected or occurring.
- The deadliest Atlantic hurricane to occur in the 20th century struck Galveston, TX on September 8, 1900, claiming 6,000 lives.
- Hurricanes never form within 5 degrees latitude of the equator. Although the ocean waters near the equator do get warm enough to fuel hurricanes, the effect that the earth's rotation has on winds and ocean currents, known as the Coriolis effect, is too weak near the equator for hurricanes to form.

Activities and Games

Track Andrew

Before forecasters can determine where a hurricane is heading, they first determine where it has been. This is done by plotting the storm's position on a special kind of map called a **hurricane tracking chart**. You can download your own, official hurricane tracking chart at:

http://www.sercc.com/products/tropical/track_chart2.pdf

The table below lists the official positions of Andrew as it grew from a tropical depression to a tropical storm to a full-fledged hurricane before eventually losing its strength and dying out.

ADVISORY	LAT	LON	TIME	WIND	PRESSURE	ADVISORY	LAT	LON	TIME	WIND	PRESSURE
1	10.8	-35.5	08/16/18Z	25	1010	**25**	25.7	-69.7	08/22/18Z	80	969
2	11.2	-37.4	08/17/00Z	30	1009	**26**	25.6	-71.1	08/23/00Z	90	961
3	11.7	-39.6	08/17/06Z	30	1008	**27**	25.5	-72.5	08/23/06Z	105	947
4	12.3	-42.0	08/17/12Z	35	1006	**28**	25.4	-74.2	08/23/12Z	120	933
5	13.1	-44.2	08/17/18Z	35	1003	**29**	25.4	-75.8	08/23/18Z	135	922
6	13.6	-46.2	08/18/00Z	40	1002	**30**	25.4	-77.5	08/24/00Z	125	930
7	14.1	-48.0	08/18/06Z	45	1001	**31**	25.4	-79.3	08/24/06Z	120	937
8	14.6	-49.9	08/18/12Z	45	1000	**32**	25.6	-81.2	08/24/12Z	110	951
9	15.4	-51.8	08/18/18Z	45	1000	**33**	25.8	-83.1	08/24/18Z	115	947
10	16.3	-53.5	08/19/00Z	45	1001	**34**	26.2	-85.0	08/25/00Z	115	943
11	17.2	-55.3	08/19/06Z	45	1002	**35**	26.6	-86.7	08/25/06Z	115	948
12	18.0	-56.9	08/19/12Z	45	1005	**36**	27.2	-88.2	08/25/12Z	115	946
13	18.8	-58.3	08/19/18Z	45	1007	**37**	27.8	-89.6	08/25/18Z	120	941
14	19.8	-59.3	08/20/00Z	40	1011	**38**	28.5	-90.5	08/26/00Z	120	937
15	20.7	-60.0	08/20/06Z	40	1013	**39**	29.2	-91.3	08/26/06Z	115	955
16	21.7	-60.7	08/20/12Z	40	1015	**40**	30.1	-91.7	08/26/12Z	80	973
17	22.5	-61.5	08/20/18Z	40	1014	**41**	30.9	-91.6	08/26/18Z	50	991
18	23.2	-62.4	08/21/00Z	45	1014	**42**	31.5	-91.1	08/27/00Z	35	995
19	23.9	-63.3	08/21/06Z	45	1010	**43**	32.1	-90.5	08/27/06Z	30	997
20	24.4	-64.2	08/21/12Z	50	1007	**44**	32.8	-89.6	08/27/12Z	30	998
21	24.8	-64.9	08/21/18Z	50	1004	**45**	33.6	-88.4	08/27/18Z	25	999
22	25.3	-65.9	08/22/00Z	55	1000	**46**	34.4	-86.7	08/28/00Z	20	1000
23	25.6	-67.0	08/22/06Z	60	994	**47**	35.4	-84.0	08/28/06Z	20	1000
24	25.8	-68.3	08/22/12Z	70	981						

Quick Quiz

1. What does it mean if the name of a hurricane is “retired”?
2. What is the difference between a hurricane warning and a hurricane watch?
3. What is the determining factor in the Saffir-Simpson scale ?
4. What are the wind speeds of the five categories in the Saffir-Simpson scale?
5. Where was the deadliest Atlantic hurricane in the 20th century located?

Learn More About It

Now that you’ve learned about hurricanes and how they’re classified, you may want to learn more.

Below are some web sites that offer more information about hurricanes:

The National Hurricane Center’s Q&A page about Hurricane Andrew’s winds gives more information about its intensity.

http://www.nhc.noaa.gov/AndrewQandA.html

The Federal Emergency Management Agency web page that has links to quizzes, games, and hurricane preparation.

http://www.fema.gov/kids/huclasf.htm

The National Climatic Data Center’s hurricane page has graphics and storm reports for previous hurricanes

http://lwf.ncdc.noaa.gov/oa/climate/severeweather/hurricanes.html

Also, be sure to check out our website for more educational and climate data resources:

http://www.sercc.com

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