Suncoast Weather Observer

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Inside This Issue...

New Online SKYWARN Spotter Training

By: Daniel Noah

This free course is designed for any individual who is interested in becoming a registered SKYWARN Spotter or learning more about the National Weather Service (NWS) SKYWARN Spotter program. You can find the training at the following link: https://www.meted.ucar.edu/training_course.php?id=23 The NWS in Ruskin will receive a list of trainees every two weeks, and it may take two additional weeks to receive your SKYWARN ID by mail. You can always contact daniel.noah@noaa.gov if you have questions or haven't received your ID.

Role of the SKYWARN Spotter

This training provides baseline training for all spotters through multiple scenarios covering the procedures for spotting (including communication and storm report criteria), safety considerations for all hazards, and an overview of the national program and its history.

SKYWARN Spotter Convective Basics

This module will guide users to a basic understanding of convective storms. Through three different scenarios, you will cover reporting and proper communication of local storm reports to the National Weather Service (NWS), personal safety during these events, and field

identification of convective storm hazards. After completing the scenarios, you will be given the opportunity to practice identifying storm features from a spectrum of photos.

What is SKYWARN?

The effects of severe weather are felt every year by many Americans. To obtain critical weather information, NOAA's National Weather Service (NWS), part of the U.S. Department of Commerce, established SKYWARN® with partner organizations. SKYWARN® is a volunteer program with nearly 290,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service.

Although SKYWARN® spotters provide essential information for all types of weather hazards, the main responsibility of a SKYWARN® spotter is to identify and describe severe local storms. In the average year, 10,000 severe thunderstorms, 5,000 floods and more than 1,000 tornadoes occur across the United States. These events threatened lives and property.

Since the program started in the 1970s, the information provided by SKYWARN® spotters, coupled with Doppler radar technology, improved satellite and other data, has enabled NWS to issue more timely and accurate warnings for tornadoes, severe thunderstorms and flash floods.

SKYWARN® storm spotters are part of the ranks of citizens who form the Nation's first line of defense against severe weather. There can be no finer reward than to know that their efforts have given communities the precious gift of time--seconds and minutes that can help save lives.

Who is Eligible?

NWS encourages anyone with an interest in public service and access to communication, such HAM radio, to join the SKYWARN® program. Volunteers include police and fire personnel, dispatchers, EMS workers, public utility workers and other concerned private citizens. Individuals affiliated with hospitals, schools, churches, nursing homes or who have a responsibility for protecting others are also encouraged to become a spotter.

How Can I Get Involved?

NWS has 122 local Weather Forecast Offices, each with a Warning Coordination Meteorologist, who is responsible for administering the SKYWARN® program in their local area. Training is conducted at these local offices and covers:

- Basics of thunderstorm development
- Fundamentals of storm structure
- Identifying potential severe weather features
- Information to report
- How to report information

- Basic severe weather safety

Classes are free and typically are about two hours long. To find a class in your area:

- Go to: http://www.stormready.noaa.gov/contact.htm and click on your state
- When your state comes up, click on the name of your Weather Forecast Office
- Once at your local WFO home page, in the blue bar on the left, look for the SKYWARN link to find a schedule of classes and other local information

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NWS TBW IMET/ER-Met Supports County Line Wildfire

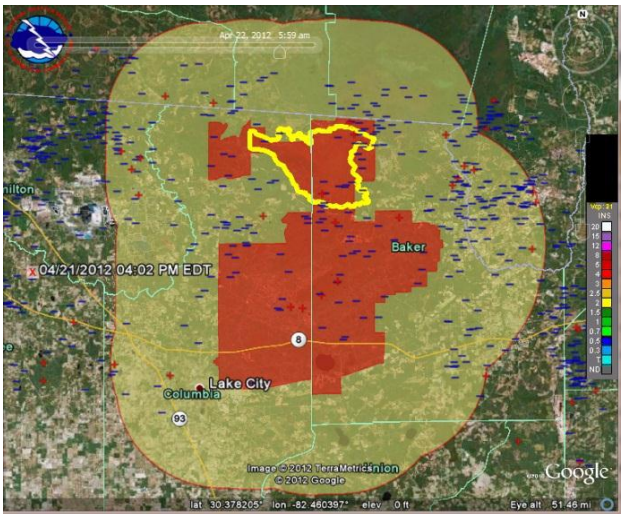
By: Rick Davis

National Weather Service Tampa Bay Area IMET and ER-Met Rick Davis provided Decision Support Services at the County Line Wildfire in Northeast Florida in the Osceola National Forest. Dispatched from April 10th through April 24th, Rick worked with the Southern Region Type 2 Incident Management Team, to provide critical and specific weather forecasts, numerous briefings, and weather alerts to a wide variety of Federal, State, and Local responders, fire crews and operational personnel.

Long-term exceptional drought conditions persisted in the swampy areas of northern Florida and southern Georgia when lightning struck the Osceola National Forest's Pinhook Swamp on April 5th. Dry and breezy weather conditions combined with abnormally dry fuels to produce the wildfire that quickly grew in size and complexity. By mid-month, during the peak of the fire activity, the fire grew to approximately 35,000 square acres with several days of red flag warning fire weather conditions and extreme fire behavior observed that produced smoke plumes reaching over 25,000 feet into the atmosphere. A few of those days resulted in smoky conditions across the Tampa Bay Area as upper level winds brought the plume nearly 200 miles south.

A strong and complex storm system moved over the region the weekend of April 21st and 22nd bringing numerous showers and thunderstorms and rainfall totals of a half inch to around an inch area wide with a few localized higher amounts. With successful suppression tactics by the incident team and crews, combined with the rainfall over the area, the wildfire was 80% contained with only smoldering fire behavior observed and mop up operations, and most of the team was demobilized around April 24th.

Below are a few pictures of IMET and ER-Met support with emergency response officials throughout the wildfire emergency.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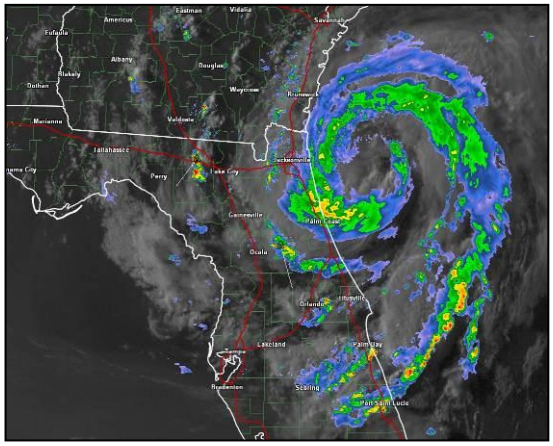
Tropical Storms Beryl and Debby Review



2012 Tropical Storm Beryl Rewind

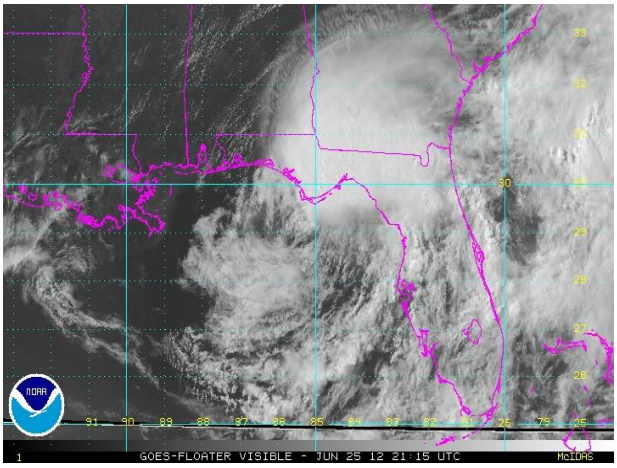
By: Daniel Noah

Tropical Storm Beryl was the second named storm of the year and it occurred before the official start of hurricane season on June 1. That hasn't happened in 108 years. The center of Beryl made landfall near Jacksonville at 12:10 AM EDT on May 28 as a strong tropical storm with winds of 70 mph, then became a tropical depression less than 12 hours later as it curved slowly northward to the Georgia border. Downed trees and power lines knocked out power to 36,000 customers in the Jacksonville area and produced an estimated 90,000 cubic yards of debris. Heavy rains up to 8 inches caused areas of flooding which damaged homes and made travel difficult. Above normal tides up to 2.6 feet damaged sea walls, a handful of vehicles, and at least one condo.

Closer to our area, Beryl created onshore flow in west central Florida leading to isolated areas of heavy rain and tornadoes. One benefit of Beryl was a large area of rain across north Florida that helped to ease the impact of drought in the area.

Large waterspout moved onshore just north of Yankeetown in outer rain band of Beryl. Photo by Yankeetown Fire Department.

An area of 5 to 8 inches of rain south of Lecanto in Citrus County flooded homes, some with 31" of water inside the structure. Photo by Citrus County Emergency Management.



2012 Tropical Storm Debby

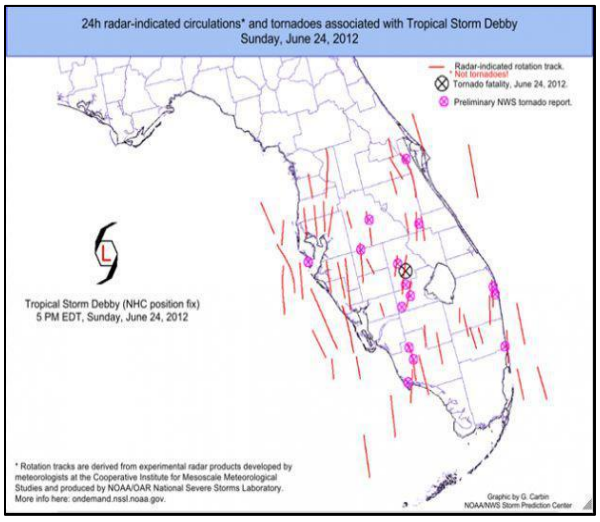
By: Jennifer Colson

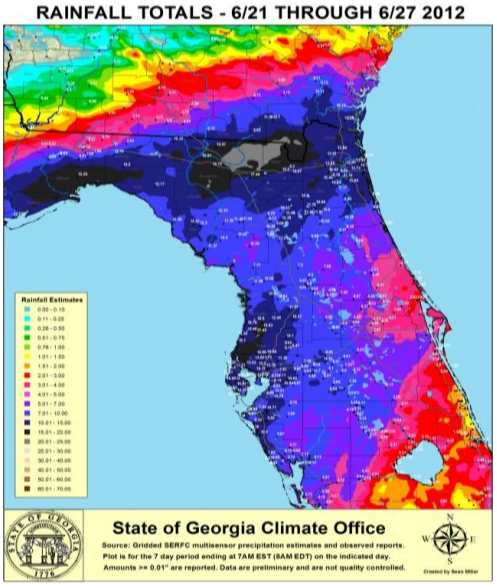
Tropical Storm Debby was the fourth named storm of the year. It was named at 5PM EDT on Saturday, June 23rd and continued through 5 PM EDT Wednesday June 27th, making landfall on Tuesday near Steinhatchee in the Florida Big Bend area before crossing the state and moving into the Atlantic Ocean.

Heavy tropical rains ahead of and with Debby allowed for very high rainfall totals across much of the area and will put numerous locations within the top 5 wettest June's since records began. Rainfall totals reached around 20 inches in some locations around Brooksville and Spring Hill in Hernando County, with a widespread 10-15 inches across much of the greater Tampa Bay and Nature Coast areas. This lead to minor to moderate river flooding across several area rivers and caused numerous homes to be evacuated from the flood waters.

In addition to the river flooding, coastal flooding was a big problem along the west-central Florida coast. Flooding of 3 to 5 feet above ground level for the Nature Coast and 1 to 3 feet above ground level around the greater Tampa Bay area was observed as persistent onshore flow and large southwest swells combined with high tides of around 3 feet. This led to lots of beach erosion and flooding of barrier islands.

Tornadoes were Debby's final hit, with at least 11 confirmed tornadoes causing a lot of damage across the state and claiming one life in Highlands County. Reports and damage estimates are still being assessed, but monetary damage will likely be in the tens of millions of dollars.





Keep yourself and your family safe. Check out http://www.nhc.noaa.gov/prepare/ for information on impacts and preparation this hurricane season.

Precipitable Water

By: Paul Close

On some occasions you may have seen the term Precipitable Water (PW or PWAT) mentioned in Area Forecast Discussions (http://forecast.weather.gov/product.php?site=TBW&issuedby=TBW&product=AFD) or other meteorological analysis, and wondered what it is and what effect is has on our weather.

The technical definition of precipitable water is a measure of the depth of liquid water at the surface that would result after precipitating all of the water vapor in a vertical column over a given location, usually extending from the surface to 300 millibars. In simpler terms, if you could squeeze out all of the moisture in a vertical column up to about 30,000 feet over a given location, then the amount or depth of water that you would get is the precipitable water. Precipitable water is measured in millimeters or inches. It is usually calculated from the upper air soundings which are available twice a day at numerous locations across the United States (http://www.spc.noaa.gov/exper/soundings/) and other parts of the world. The values of PW range from 0 to around 3 inches (or 71 millimeters), but can vary greatly depending on the season and location. For West Central and Southwest Florida, typical values range from just below an inch during the winter to around 1.80 inches during the summer (see Figure 1 below). However, the PW values can vary greatly from day to day throughout the year. Below is a graph created by NWS personnel in Rapid City using the upper air data from our office here in Ruskin, FL showing the mean and extreme values of precipitable water by month throughout the year.

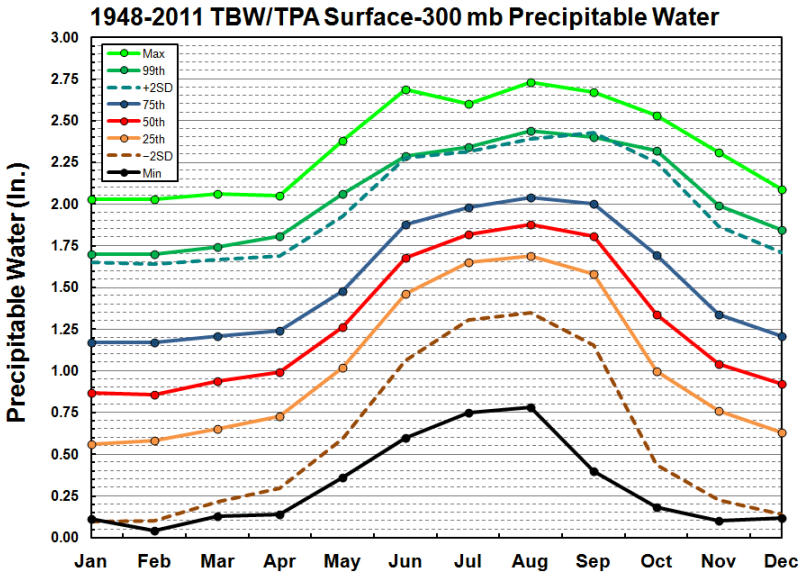


Figure 1 - Precipitable Water Climatology

As you can see in Figure 1 above, the average PW (or 50th percentile) for each month is indicated by the solid red line, but we've had PW values less than 0.10 inch during the Winter months (solid black line) and nearly as high as 2.75 inches during the Summer (solid light green line). Therefore, a PW of 1.50 inches in January, which is in the top one quarter wettest during this month, is a lot different than a 1.50 inch PW in August, which is in the top one quarter driest.

During the summer months the PW from the morning (12Z) upper air sounding can be a helpful indicator of what the chance of thunderstorms is across the Florida peninsula on that day. However, there are many additional parameters that need to be taken into account for us to see thunderstorms, such as the temperature, the prevailing wind direction and speed, the amount of sunshine and the sea breeze development. But, if you don't have moisture, then it's a little tough to get rain. Therefore, as noted in Figure 1 above, the average values of PW in our area during the summer range from about 1.70 to 1.90 inches. These values give us our typical 40-60 percent thunderstorm coverage on any given afternoon.

Precipitable water values though can vary greatly. As seen in Figure 2 below, on July 7, 2011 the PW was up around 2.46 inches, which is in the top one percent or more than two standard deviations above normal. The rainfall coverage on this day ended up being about 80 to 90 percent (Figure 3).

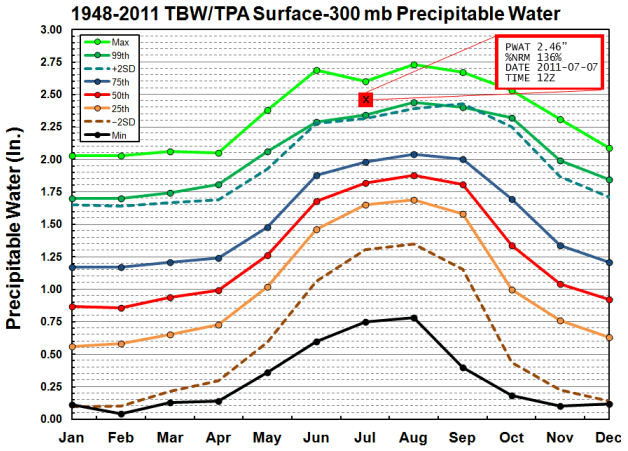


Figure 2 - Precipitable Water On July 7, 2011 Plotted On PW Climatology

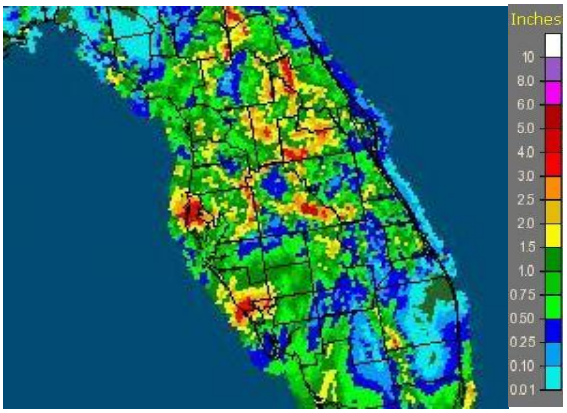


Figure 3 - Rainfall Total On July 7, 2011

Meanwhile on June 17, 2012 (Figure 4) the PW was down around 1 inch which is in the lowest 15th percentile or two standard deviations below average, and therefore the rainfall coverage (Figure 5) as expected was less than 10 percent.

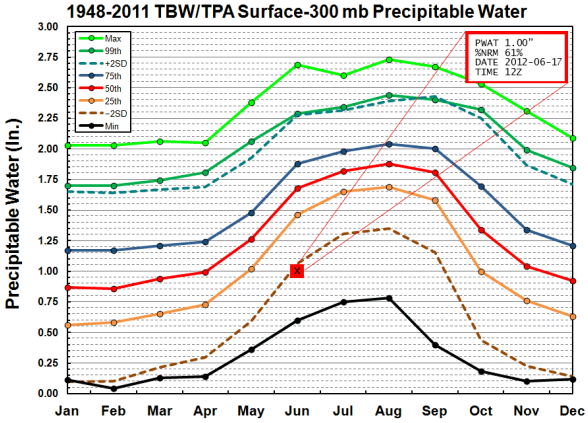


Figure 4 - Precipitable Water On June 17, 2012 Plotted On PW Climatology

Figure 5 - Rainfall Total On June 17, 2012

Precipitable water values can also vary over a relatively short distance. In Figure 6 below you can see how the difference in PW can affect the rainfall coverage. This is the rainfall total rom July 19, 2011 when the PW at the NWS in Ruskin was around 1.54 inches, while in Miami it was near 2.00 inches. Therefore, as expected the majority if not all of the rain on this day was across South Florida where there was more moisture.

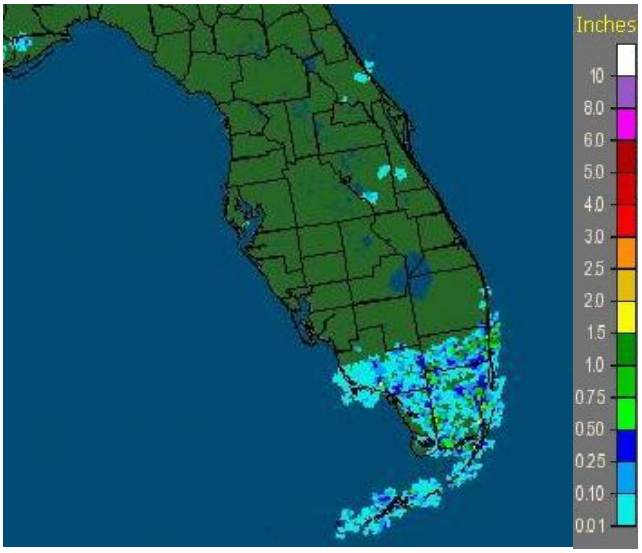


Figure 6 - Rainfall Total On July 19, 2011

So as we've seen although not the only factor in determining the chance of rain on any given summer day, the Precipitable Water can be helpful tool. A rough estimate of the probability of rain across the Florida peninsula during the summer months (June- September) based on the PW Climatology graph (Figure 7) is listed below.

If the PW is:	**Probability of Rain**
below the 25th Percentile	20 Percent or Less
near 25th Percentile (orange line)	20 to 40 Percent
near 50th Percentile (red Line)	40 to 60 Percent
near 75th Percentile (blue line)	60 to 80 Percent
above the 75th Percentile	80 Percent or Greater

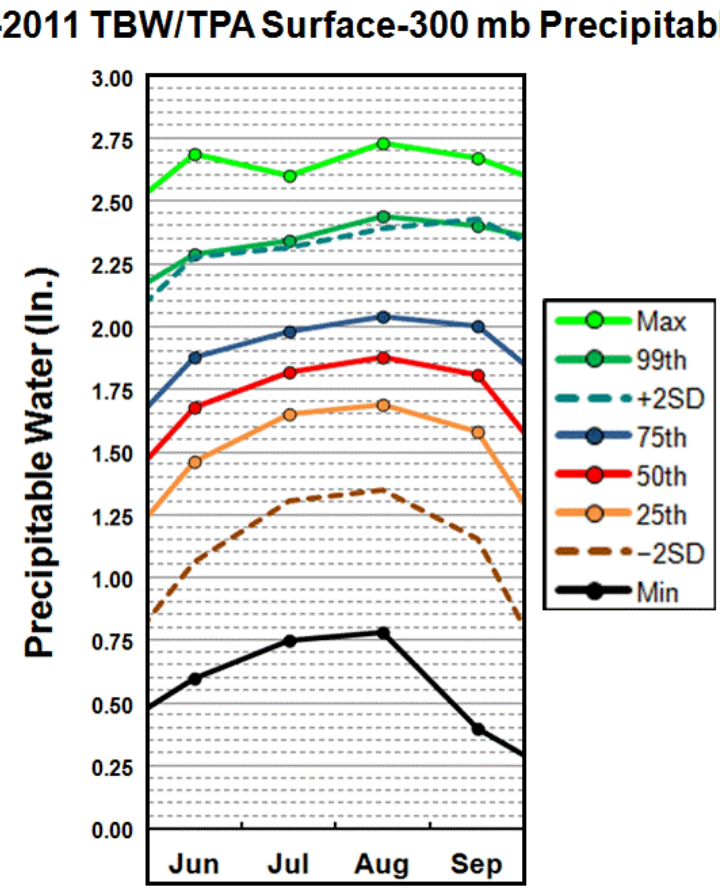


Figure 7 - Summer Precipitable Water Climatology

To view todays PW plotted on the climatology graphs go to the following link:
http://www.crh.noaa.gov/unr/include/pw.php?sid=TBW&rt=yes

Otherwise, to see the Upper Air Soundings with the PW listed on them, check some of the other links listed below.

Some Web Links:

Precipitable Water Plots -	http://www.crh.noaa.gov/unr/?n=pw
SPC Observed Sounding Archive -	http://www.spc.noaa.gov/exper/soundings/
NOAA/ESRL Radiosonde Database -	http://esrl.noaa.gov/raobs/
NCAR Real Time Weather Data -	http://weather.rap.ucar.edu/upper/
University of Wyoming -	http://weather.uwyo.edu/upperair/sounding.html
College of DuPage -	http://weather.cod.edu/analysis/

National Weather Service Offices Join Twitter

By: Jennifer Colson

National Weather Service Offices across the country have joined Twitter in recent months. This includes not only local forecast offices, but also Regional and National Headquarters offices, River Forecast Centers, and other National Centers such as the National Hurricane Center and the Storm Prediction Center. You can follow our office at @NWSTampaBay, or by going to this link: http://twitter.com/NWSTampaBay

The Twitter page, like our Facebook page, will act as a way to highlight expected severe weather events, inform followers of planned office events such as Skywarn™ trainings, educate followers on weather safety or past weather events, and be a place where followers can interact directly with NWS forecasters. However, for detailed forecasts and site specific information, as well as radar feeds, watch and warning information, etc., you will instead want to visit our regular website, http://weather.gov/tampa. Here is the direct link to the Tampa Bay office Facebook page: http://www.facebook.com/US.NationalWeatherService.TampaBay.gov

Thank you for your support!

TBW Forecasters Participate in Familiarization Fires

By: Rick Davis

In partnering with the Florida Forestry Service (FFS) and Florida Park Service (FPS), some of the National Weather Service Tampa Bay Area forecasters were able to participate in a couple of familiarization (FAM) fires in Manatee and Hillsborough Counties. These FAM Fires allow the staff to verify fire weather forecasts first-hand, build relationships with local fire officials, and to personally witness how important the weather and spot forecasts are to fire planning, control, and safety operations for both prescribed/control burns and wildfires.

The first of these FAM Fires occurred on 5/24/12. Emergency Response Meteorologist (ER-Met) Rick Davis, and Senior Meteorologists Jon Jelsema and Bryan Mrozcka assisted with a 640 acre prescribed burn in the Myakka State Park in Manatee County. The second FAM Fire occurred on 6/19/12 and included ER-Mets Rick Davis, Mike Gittinger and Todd Barron, as well as Senior Meteorologist Paul Close and Meteorological Intern Tyler Fleming. This 60 acre

prescribed burn was on conservation land in southern Hillsborough County headed by the FFS. Some pictures from the FAM Fires are below.

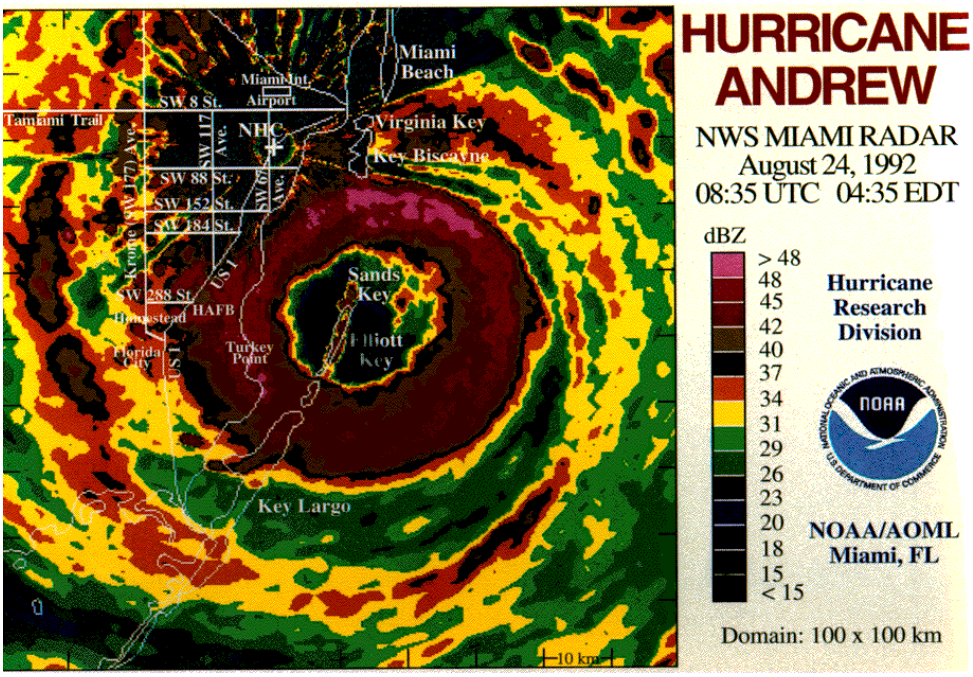
From left: Mike Gittinger, Rick Davis, Tyler Fleming, and Paul Close

Todd Barron participating in controlled burn firing operations with a drip torch

Bryan Mrozcka and Jon Jelsema take weather observations during the prescribed burn

Hurricane Andrew 20th Anniversary

By: Jennifer Colson



This year marks the 20th Anniversary of Hurricane Andrew. The fourth tropical cyclone, first named storm, and first hurricane of the 1992 Atlantic hurricane season, Andrew developed from a tropical wave over the central Atlantic on August 16 and continued west across the Atlantic, making landfall in the Bahamas, then in Florida near Elliot Key and Homestead as a category 5 storm on August 24th, and finally turning north and striking Morgan City, LA on August 26th. The storm then rapidly weakened as it continued over the southeastern U.S. eventually merging with a frontal system and dissipating. Andrew produced a 17 foot storm surge near the landfall point in Florida and had wind gusts of 164-177mph reported from both private and official anemometers in south Florida.

Andrew was the third costliest tropical cyclone to hit the United States, with damage totaling $26.5 billion. It was also the fourth most intense hurricane at landfall with a central minimum pressure of 922mb, and tied for the 50th most deadly hurricane with 26 direct fatalities. Lessons learned from the destruction the storm caused helped to set new building code standards across Florida. This hurricane shows that no matter the total number of storms predicted for a season, it only takes one to cause a major impact in your life, so being prepared each season is essential. Visit www.ready.gov or http://www.nhc.noaa.gov/prepare/ready.php for more information on how to get prepared.

Photos below are courtesy of the National Hurricane Center.

Hurricane Andrew's Track

Damage in Lakes by the Bay, FL

Damage in Naranja Lakes, FL

Damage in Homestead, FL. Flying debris acts as a missile in the high winds.

Thank You to all!

Editor: Jennifer Colson - Journeyman Forecaster
Contributors: Daniel Noah - Warning Coordination Meteorologist
Rick Davis - Emergency Response Meteorologist
Paul Close - Senior Meteorologist