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A New Boss Arrives...

Bennett Brings Breadth of Experience to NWS Tampa Bay

At the end of April, new Meteorologist-In-Charge Shawn Bennett arrived to take the reins of the NWS Ruskin office. Mr. Bennett brings a wealth of knowledge to the office, knowledge he's acquired through diverse experience in weather research, particularly storm-scale meteorology and tropical meteorology. Mr. Bennett has traveled across the globe, imparting his knowledge and wisdom on monsoons and tropical meteorology to communities and governments in three continents. These nations include India, Singapore, Costa Rica, and Mexico.

Shawn grew up in the Pacific Northwest during the mid 70s, moving within small towns in Oregon before



...A Reliable Hand Exits

Enjoyable Ride Ends After 43 Years for Loeper

On April 30th, Karl Loeper retired from federal service, ending a career spanning more than four decades and including nearly equal stints in the Navy and in NOAA.

Karl, who had an interest in weather since his youth, enlisted in the Navy after graduating high school in northeast Pennsylvania in 1960, and soon after commenced basic meteorology school in 1961. By the end of the year, he made his first career appearance in Florida, reporting to the Fleet Hurricane Forecast Facility in Miami as an Upper Air Analyst. For the next 9 years, Karl lived up to the

ending up in British Columbia, Canada. After high school, he served in the U.S. Navy as an aerographer's mate. Upon leaving the Navy, he set out to study meteorology, and eventually matriculated to Oregon State University, where he graduated first in his class.

He began his diverse career with NOAA's Office of Atmospheric Research in 1987 where he helped implement the United States Weather Research Program. From there, his career took off, including stints at the National Severe Storms Laboratory in Norman, Oklahoma, and at the Weather Forecast Office in Phoenix, Arizona. In 1994, he joined the NWS Southern Region as the Science and Operations Officer in San Juan, Puerto Rico, where he remained until 1999 before returning stateside to Brownsville, Texas. In 2003, he was promoted to the Meteorologist-in-Charge in Brownsville.

Mr. Bennett's notable endeavors include the pre-STORM mesoscale experiment, the Southwest Area Monsoon Project, and the recent North American Monsoon Experiment.

His recent international work with monsoons has opened a window into how other nations' weather services operate, and how fortunate the U.S. is to have the best weather services in the world.

Welcome Aboard, Shawn!

Navy's motto of "seeing the world" as a forecaster and observer in the Phillipines (1964-66) and Keflavik, Iceland (1969-70). In between, he served a tour of duty in southeast Asia (1966-67) and made his second appearance in Florida (Jacksonville, 1967).

The highlight of his Naval career occurred in the early 1970s, when he was a member of the Weather Reconnaissance Squadron. Between 1970 and 1974, Karl "flew" the world; as a Flight Weather Observer and eventually an In-Flight Meteorologist, his squadron penetrated 16 Hurricanes and a number of extratropical northern hemispheric cyclones, including four with winds of more than 100 knots! His flights covered much of the Atlantic basin, from the Caribbean to the Mediterranean and extending to the north Atlantic waters off Greenland and Iceland.

In 1980, Karl retired from the Navy, and briefly dabbled in broadcast weather in Jacksonville. By the end of the year, he returned to federal employment, joining the NWS in West Palm Beach as a Hydrometeorological Technician. In 1982, he returned to his Pennsylvania roots by transferring to the Weather Office at the Allentown/Bethlehem Airport. But, the draw of Florida was too great; after 12 years of fickle northeast U.S. weather, he returned to the Sunshine State - this time on the Suncoast - in 1994.

Thanks for the hard work, great stories, and fun times!

Community

NWS at Big Events in Tampa Bay



Left: Panoramic view of military aircraft and crowds at the MacDill AirFest, April 3, 2004. **Right:** WCM Daniel Noah and SOO Charlie Paxton discussing hurricane preparedness at the Florida Governor's Hurricane Conference on May 26, 2004.

Staff at NWS Ruskin were active in highly visible outreach activities during April and May. For another year, we hosted or assisted at outreach booths at the 30th Annual Lakeland Sun 'N' Fun Fly-In and the Florida Governor's Hurricane

Technology

Wireless Forecasts are Here!



Conference in Tampa. On the first weekend of April, the MacDill Air Fest returned after a three year hiatus, and the NWS was present among the numerous vendors, sponsors, and other government agencies.

WCM Daniel Noah and ASA Melody Jacobs visited with attendees and handed out 3,500 pieces of outreach material during the first weekend of April. The NWS display highlighted the advantages of weather radio and the dangers of lightning. One of the largest air shows in the Department of Defense, MacDill's air show highlights the missions, traditions, and heritage of the military services. Approximately 750,000 people crowded the flight line during the 2004 show. The two-day event is hosted by a variety of civilian and military aerobatics demonstration teams.

At the 18th annual Florida Governor's Hurricane Conference, the theme was Unifying Florida's Hurricane Culture, continuing the trend from the previous year in which citizen education on preparedness and evacuation planning is key to any successful hurricane mitigation plan. One of the more interesting speakers at the general session was James Talbot of the Norfolk, VA Emergency Operations Center. Talbot spoke on the effects of Hurricane Isabel, but more importantly, how Tidewater Virginia is very similar geographically and demographically to Tampa Bay.

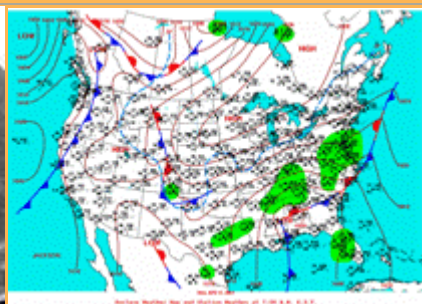
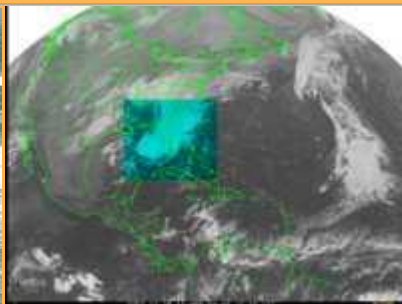
The NWS booth, staffed by several office members through the week, was well received by those who stopped by.

You can take it with you! The National Weather Service is now offering text forecasts and real-time observations, as well as various graphics, for your wireless device. Now, you can receive point forecasts and hazardous weather warning text by pushing a few buttons on your personal digital assistant or cell phone! Just type in the city, state (i.e., Tampa, FL) or zip code of your location, as you would on a personal computer, and you'll receive a point forecast instantly.

Radar, satellite, and severe weather outlook map graphics are also available. If using a cell phone, you'll need a model which provides color graphics in order to view. Please note that reception and availability will depend on your wireless carrier's capabilities and coverage area, as well as the viewing area of your wireless device. For more information, as well as an example, see our Wireless Weather Introduction.

Meteorology

What Were Those Winds?



Left: Photograph of rough surf along Manasota Key in Charlotte County, during the early afternoon of April 12th. *Center:* Satellite photo of convective system (highlighted area), 8 AM EDT, April 12th. *Right:* Surface plot, including fronts and ongoing rain, 7 AM EST April 12th. Click on each for a clearer image.

Damaging Winds Strike Twice On the Suncoast in April

Residents of the Suncoast, particularly south of the immediate Tampa Bay area, were buffeted by several bouts of interesting weather, including strong to severe thunderstorms, small tornadoes, and high winds over about a 24 hour period from daybreak on April 12th until daybreak on the 13th. Widespread strong to severe thunderstorms are not unheard of into April, as increasingly warm and humid air clashes with the last gasps of winter's cold fronts.

However, the unusual appearance of mesoscale convective systems (MCS) was unusual. The term "Mesoscale Convective System" was coined in the 1980s, and is defined as a precipitation system that contains one or more thunderstorms, covering an area between 20 and 500 kilometers and lasting from 2 to 12 hours (or more, in rare cases). MCS can take the form of squall lines, large multicell clusters (also known as Mesoscale Convective Complexes), convective rainbands, or large isolated thunderstorms. The MCS on April 12th (satellite photo above) evolved from a squall line into a decaying multicell cluster; the MCS on April 13th (below, center) was a large, isolated severe thunderstorm.

The week of April 11th began stormy. As a deep upper level trough (below, left) moved into the lower Mississippi Valley, surface low pressure developed in the western Gulf, and a line of thunderstorms developed soon after. This first line raced across the Gulf, well ahead of the low, but survived enough to sustain evening storms along the Suncoast on the 11th. Ahead of the slow-moving feature, a nearly stationary upper level jet streak, generally across the east central Gulf, aided re-development of the MCS which would eventually create the damaging winds.

As the air mass over the Gulf recovered, another line of storms developed after midnight on the 12th, and soon intensified while moving steadily east. Before daybreak, this MCS entered the coastal waters, then slammed inland just after daybreak, producing wind gusts in excess of 60 mph and at least one tornado near Englewood. Then, things got interesting.

What makes an MCS different from a typical summer storm is the development of high and low pressure cells within it. One could think of it as a small version of the larger frontal systems seen on typical weather maps (below, right). Known as mesohighs and wake lows, these pressure areas help to produce gusty gradient winds in areas well away from gust front or microburst areas.

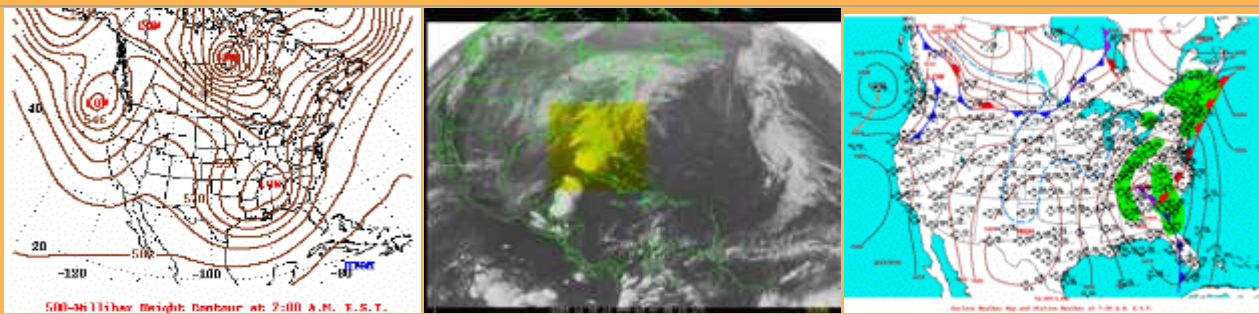
At daybreak on the 12th, a distinct mesohigh was noted by Ruskin forecasters in the area immediately behind the initial thunderstorm line. The data showed a local pressure gradient over the eastern Gulf, implying strong northeast winds. Unfortunately, raw data were non-existent, so there was no way to confirm the strength of the winds. The high was able to maintain itself into the afternoon, likely a result of rain cooled air and a fairly thick mid level overcast. However, as it shifted southeast, a "reverse gradient" developed between the mesohigh, the wake low, and the primary low pressure system, now located south of the Louisiana Coast. Around this time, surface winds "flipped" to the southwest and increased to 30 to 40 mph, with recorded gusts of 60 mph along the Suncoast from Tampa Bay southward. Additional minor damage was reported to trees, power lines, and structures along the coast from Pinellas to Lee Counties.

The weather quieted down - for awhile - that evening. Unfortunately, the same upper level disturbance was still around, as was the jet streak; only they were displaced a bit east than a day earlier. Just before midnight on the 13th, a large severe storm raced eastward about 50 miles north of Key West. Soon after, by 2 AM, a large, ferocious thunderstorm developed about 200 miles or so west-northwest of Key West, attaining cold

cloud temperatures of -80C (rarely seen this far south) as well as incredible lightning production, as high as nearly 1500 strikes in a 1000 mi² area in 15 minutes! The photograph below (center) shows the initial storm development, during the mid evening of April 12th.

Well to the northeast of these cells, winds began to gust in excess of 40 mph along the Collier County coast at Naples soon after midnight from the south. This appeared to be a result of the massive convective outflow from the dangerous storms. By 3 AM, these winds had reached Lee County. Soon after, the sustained winds in Fort Myers and Cape Coral reached 30 to 40 mph, with frequent gusts to 60 mph. Unfortunately for residents of southwest Florida, the winds continued for two full hours, producing widespread minor structural and natural damage, power outages, and even minor coastal flooding generally from Fort Myers Beach southward. Through it all, there was only a mid level overcast; no rain, and no thunder.

In all, the entire event produced more than \$1 million in damage along the coast from Tampa Bay southward from the combination of wind damage and minor coastal flooding. Though the damage was repaired, the memories of the wild winds may remain.



Left: 500 millibar pattern at 8 AM EDT, Tuesday, April 13th 2004. **Center:** Satellite photo of convective system (highlighted area), 8 PM EDT, April 12th. **Right:** Surface plot, including fronts and ongoing rain, 7 AM EST April 13th. Click on each for a clearer image.