Suncoast Weather Quarterly

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Inside This Issue...

Feature Article

Active Atlantic Tropical Cyclone Season Forecast in 2003

What it Means to You, and How We Will Help

Hurricane Lili over the central Gulf of Mexico, October 2, 2002, while briefly reaching Category 4 status. Photograph courtesy of

NOAA's Operational Significant Event Imagery support team.

The latest forecast is in, and it paints an active season, with between 6 and 9 hurricanes expected to develop. Could this be the year? Only time will tell. If it ***is*** our turn, you can be assured that the National Weather Service office in Tampa Bay, in conjunction with the National Hurricane Center (NHC), will provide improved service through a variety of new forecast techniques.

This article will provide information on the new five day track forecast, forecast and hazards mitigation information available on line, and a brief review of two famous 20th century events on the Suncoast.

The Five Day Forecast

After a two year period of experimentation using improved modeling capabilities, NHC will now issue hurricane track forecasts out to 120 hours. Though forecast uncertainty will increase toward the end of the period, the long-lead forecast will aid planning strategies, for both military and civilian interests alike.

The experimental forecast error on day five for the Atlantic basin was 323 nm. Though this value may seem large, it is worth noting that near 40 years ago, the error for the initial day 3 forecast was **389** nm.

Online Information

Graphical Forecasts

For years, the NWS has provided information on local hurricane effects and impacts through the text-only Hurricane Local Statement (HLS) product. The HLS remains a viable product; unfortunately, it can become very lengthy in critical situations. The proliferation of the Internet allows much of this information to be displayed ***graphically***. NWS Tampa Bay - Ruskin will soon be joining this effort. Figure 1 shows an example of the Graphical HLS from NWS Melbourne.

Hazard Mitigation

Much more hurricane-related information is available on the Internet. Two of the more popular sites are NHC's Hurricane Awareness Week Page, which

Damaging Suncoast Hurricanes

F or the past century, the Florida Suncoast has been largely spared from catastrophic hurricanes. However, two notable storms produced widespread damage, and some casualties, during the first half of the 20th century. A brief review of the October, 1921, and October, 1944 unnamed hurricanes follows.

October 25, 1921: Turbulent Tampa Bay

The 1921 storm was last significant tropical cyclone to make a direct hit on Tampa Bay Post-mortems rated this storm a Category 3 shortly before landfall; however, observed data from the U.S. Weather Bureau suggest a strong Category 1 as it passed through. The storm tracked through northern Pinellas and southern Pasco Counties, and produced a storm tide of 10.5 feet in Tampa Bay, and storm total rainfall was more than 6 inches.

Damage was extensive from both wind and water. Property damage of $1 million was realized, at a time when the area population was 6% of what it is today! Widespread surge flooding was reported in South Tampa, with a bit less along the resorts of Pinellas County. Nearly half of the citrus crop was destroyed in Pinellas and Hillsborough Counties. Despite the extensive damage in populous areas, only six fatalities were recorded.

October 18-19, 1944: Widespread Inland Wind Damage

This storm, also rated a Category 3 shortly before landfall, made landfall near Nokomis (Sarasota County) then proceeded northward through central Manatee and Hillsborough Counties, and eastern Pasco County. Record low pressure was recorded at Tampa as the west side of an expanding eye passed over. Damage and observations suggest Category 1 sustained winds, with frequent gusts above Category 2 (96 mph and above). Nine fatalities occurred when a boat capsized near the mouth of Tampa Bay.

Significant crop damage was reported, with initial reports of nearly half of the Florida grapefruit and at least 15% of the orange crop destroyed. Initial press reports estimated crop damage at between $20 and

provides both weather and public safety information for each type of hurricane hazard, and an Emergency Management web site which provided detailed coastal evacuation information for the state of Florida.

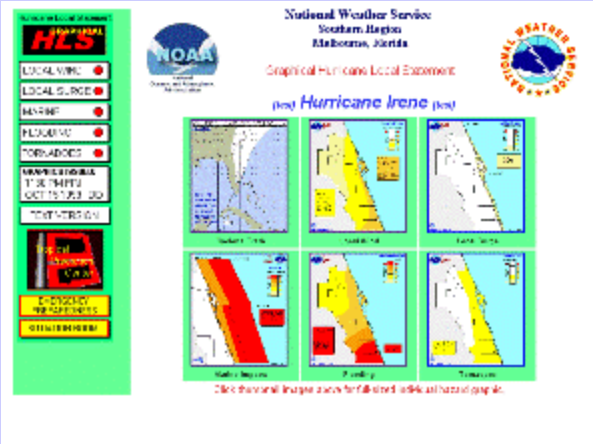

Figure 1. Example of title page of Graphical HLS courtesy of NWS Melbourne.

$50 million - devastating by 1944 standards. Property damage was extensive as well, including both coastal and inland locations. Storm surge flooding was widespread in Charlotte and Lee Counties.

The 1944 hurricane was one of the most accurately forecast storms on record. Most residents of West Central and Southwest Florida had more than 24 hours of lead time, as the lack of fatalities given the extensive damage attests.

Table 1. Tropical Cyclone Names, 2003

Ana (Apr. 22-23)	Henri	Odette
Bill (Jun 29 - Jul 1)	Isabel	Peter
Claudette	Juan	Rose
Danny	Kate	Sam
Erika	Larry	Teresa
Fabian	Mindy	Victor
Grace	Nicolas	Wanda

Outreach

StormReady® and Adopt-A-County Update

NWS Tampa Bay staff have been busy like bees in Spring 2003 performing numerous outreach activities. Dozens of visits included seven Skywarn™ and Marine hazards classes, fire weather training, several emergency management visits, and additional StormReady® certification.

Between March and early June, Adopt-A-County visits have been extensive. Dan Noah, WCM, conducted several Skywarn™ classes, staffed the NWS booth at the Citrus County hurricane expo and the Florida Aquarium, and spoke to hundreds at the Charlotte County hurricane caravan. Senior Forecasters Frank Alsheimer, Barry Goldsmith, and Ron Morales conducted Skywarn™ and Marine training in Charlotte, Pinellas, Polk, and Hernando Counties, and gave additional talks to community groups. Forecasters Rick Davis and David Rittenberry provided fire weather training to Florida Division of Forestry personnel in Sarasota and Highlands Counties, and Richard Rude helped organize and staff the NWS booth at the Lakeland Sun 'N' Fun Fly-In Festival in early April (see article at right).

Several Counties received their StormReady® Certification. Hardee County (May 1), Highlands Co (May 20), and Pasco Co (June 3) all were accepted. Sumter, Hernando, and Polk, the remaining Suncoast counties yet to be certified, are well on their way to completion before the end of the year. Barry Goldsmith and Russ Henes (below) presented Hardee County; Dan Noah presented Highlands, and Frank Alsheimer presented Pasco.

Hardee County Storm Ready Certification ceremony.
From left: NWS staffers Russ Henes and Barry Goldsmith;
Emergency Management Director Bill Muhlfeld.

NWS Tampa Bay Staff Profile

Space Shuttle Columbia Recovery Operations

NWS Tampa Bay's Incident Meteorologist helps provide weather support


Federal Emergency Management Agency officials, and state and local fire/public safety officials, discussing clean-up operations of material from the periled Space Shuttle Columbia.

A handful of NWS Southern Region Incident Meteorologists (IMET), including Tampa Bay's ***Rick Davis***, joined the effort to provide weather support, in East Texas, for the Incident Command Staff and searchers of the Columbia recovery operations. The IMET responsibilities included providing daily ground support and

aviation weather forecasts as well as briefings to the Command Teams and hundreds of search crews. Rick was dispatched to the Palestine Branch of the operations, for about two weeks, in early April. With spring being severe weather season in the region, an around the clock weather watch was always maintained to protect life and property of the entire recovery operations. During the recovery operations, several severe weather events occurred, including two confirmed tornadoes which passed through the recovery area. With ample lead time, IMETs provided weather warnings and alerts that helped staff and crews move to safety.

The Space Shuttle Columbia Recovery Operations were headed by FEMA, NASA and the Texas Forest Service with more than 130 federal, state and local agencies participating in the recovery effort. Due to the nature of the operations, tight security was always maintained. The search involved extensive air and ground searches in a 10-mile by 240-mile corridor along the projected shuttle flight path.

After three months of searching (February through April), search personnel recovered more than 82,500 pieces of shuttle debris equaling a total weight of 84,800 pounds, or almost 40 percent of the total dry weight of the shuttle. Ground, water and air searches combined covered more than 2.28 million acres. Approximately 25,000 personnel took part in the recovery operation.

Spring Outreach Event

NWS Tampa Bay Soars in Lakeland!

NWS Tampa Bay and NWS Headquarters helped celebrate 100 years of powered aviation at the annual Sun-n-Fun Fly-in in Lakeland, FL from April 2-8, 2003. The NWS outreach booth was one of 500 exhibits and focused on on weather conditions using the Aviation Weather Center web site.

The interaction between the NWS and pilots, as well as the NWS and commercial vendors, was robust Unfortunately, attendance at the seven day event was 250,000, down from 650,000 in 2002. Still, a good time was had by all!

Customer Service at the Sun 'N' Fun Fly-In: From left:
Daniel Noah - WCM, NWS Tampa Bay; Mike Graf, NWS Headquarters;
Charlie Paxton, SOO, NWS Tampa Bay,
Kathleen Schlachter, NWS Headquarters, and one satisfied customer!

Customer Profile

Tom Blackburn: Mr. Data!

Retired NWS Quality Assurance Specialist aids staff

Tom Blackburn, a retired NWS employee who now resides in Tampa, continues to provide extensive support to weather operations on Florida's Suncoast by providing routine observations to both the NWS and local media. This labor of love stems from his rather illustrious, and well traveled, 38+ year career in NWS - a career highlighted by groundbreaking efforts in both weather observing systems and workforce diversity.

Out in the Field: 1957-1966

Tom's early career took him around the eastern United States and Puerto Rico. Stops included

Mr. B goes to Washington: 1967-1996

Upon arrival in suburban Washington, DC, Tom's first tasks included researching and writing papers on data needs and codes for World Meteorological Organization Region IV (North and Central America). This experience provided several travel opportunities to the Caribbean to answer questions from government weather representatives. Tom also arranged for other nations to encode Airmen's Reports (AIREPS) to fit the NWS mainframe computers. During the 1970's, Tom wrote manuals and revised forms for taking and reporting co-op weather observations, and started a metropolitan weather observing network. In

Toledo, Richmond, San Juan, and a brief stint at Florida State University. His first position in the then Weather Bureau was in Toledo (1957-59) as a weather observer, providing data needed most importantly for aircraft operations.

Weather operations were drastically different back then. A severe weather warning meant making dozens of individual telephone calls to the media. We had no radar. An hourly trip to an aspirated shelter provided our dry and wet bulb readings (2 trips each hour if the wick was frozen). The "Wilson Grid" was used to "manually" predict the motion of 500 mb troughs and lows. Later, thanks to computers, came the barotropic and (initially disastrous) baroclinic models. However, there were no model guidance forecasts, and precipitation probability forecasts did not exist.

Between 1959 and 1962, while in Richmond, VA, Tom began pursuing larger issues which would shape his career. He set up a small real-time flash-flood network of volunteer homeowners, reporting rainfall and creek-levels in a flood-prone area. At the same time, he became involved in the fledgling civil rights movement in his spare time.

In 1962, Tom left the mainland for San Juan. He was now a forecaster, primarily for trans-Atlantic flights and tropical cyclones. Flight forecasts were provided to the US, South America and Europe for several international commercial carriers. Some airlines had navigators, who calculated wind direction and speed using "dog factors" (d-values – the difference between the pressure and radar altimeter readings) and air vs. ground speed. Tom's major achievement was to convert d-values into upper level constant pressure height data, which for it's time was the only source of such data over the tropical Atlantic Ocean.

addition, requirements for the optimum spacing between official observing sites were implemented, using a weighted frequency of weather hazards by population density. I used similar criteria for establishing coastal marine observing sites.

As civil rights became a national mandate for change, federal government agencies did likewise during the late 1960s and 1970s. Tom was part of a team which started a pilot project to bring minority high school students into the NWS. After some growing pains, Tom's initiative became a personal success, as the students were vital in publishing a monthly newsletter and collecting data.

During the early 1980's, Tom became involved with initial climate change studies. With energy prices near record levels, Tom helped to prepare daily maps forecasting the amount of solar energy expected to reach the ground across the nation - to help determine the feasibility of harnessing the sun as an alternative source of energy. These initial forecasts laid the groundwork for the Ultraviolet Index.

From the mid 1980s to the end of his tenure in 1996, Tom was the Program Manager for Cooperative Observations. Tom developed requirements for new instruments and worked with the Engineering Division to test and implement them. Improved technology allowed observations to be collected by telephone or modem. Soon after the Persian Gulf War (1991), the first Global Positioning Satellite units were field tested, and were eventually distributed to NWS offices with Cooperative Program Managers.

Epilogue: Mr. Data on the Suncoast!

In 1996, during a brutal Washington winter and after a federal government work stoppage, Tom and his wife decided to make tracks for Tampa Bay. Even in retirement, Tom has provided vital, near real-time data to the weather community, and continues to produce and mail monthly weather summaries to his local network. Much of his collected data have been presented on our Significant Weather Events page.

Tom, your support is immeasurable! Thanks

	from all of us at National Weather Service Tampa Bay.