

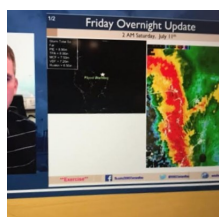
SUNCOAST OBSERVER

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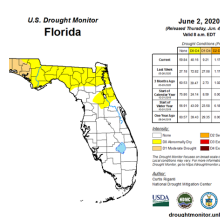
Top stories in this newsletter



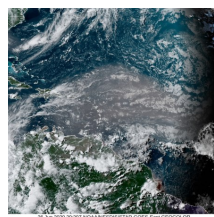
Port Tampa Bay
Tabletop Exercise



2020 Hurricane Season

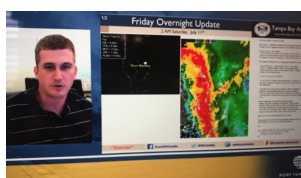


Spring 2020 in Southwest Florida: A Roller Coaster



The Saharan Air Layer

Port Tampa Bay Tabletop Exercise



By: Dustin Norman

Every year, Port Tampa Bay and the Tampa Bay Area's National Weather Service office presents a tabletop exercise with the goal of sharpening the preparedness and response actions of port tenants along with local, state, and federal partners. This year, COVID-19 prevented the exercise from taking place in person so it was decided to conduct the exercise remotely. The 8th Annual Hurricane Tabletop Exercise on Wednesday, May 27th 2020. Partners included U.S. Coast Guard, U.S. Customs, local/state emergency management, Tampa Fire/Police, Hillsborough County Sheriff, and members from the Port Heavy Weather Advisory Group just to name a few. In total, over 165 registrants ranging from a plethora of fields participated in this year's exercise.

After several years of simulations that would bring catastrophic hurricanes into Tampa Bay, it was time to switch up this year's exercise in order to induce new conversations. Meteorologist Dustin Norman imagined up and executed a multi-faceted 3-phased exercise that combined historic flooding, tornadoes, and a hazmat incident. With the help of Science & Operations Officer Bryan Mroczka, radar imagery from Hurricane Harvey was mapped onto the KTBW radar which simulated a very slow-moving tropical storm. During a period of significant flash flooding, a tornado warning was issued for the Port and adjacent parts of Tampa. Damage from the tornado not only involved scattered shipping containers, but it also resulted in a 30-minute chlorine leak from a tank located at the wastewater treatment plant. The NWS then provided a HYSPLIT run on the toxic plume to assist Tampa Fire Rescue and the Tampa EOC with information needed to make educated decisions on downwind evacuation orders. Nevertheless, the combination of several hazards, combined with a serious hazmat incident, introduced dynamics that successfully tested even the most seasoned of officials.

2020 Hurricane Season



By: Jen Hubbard and Stephen Shiveley

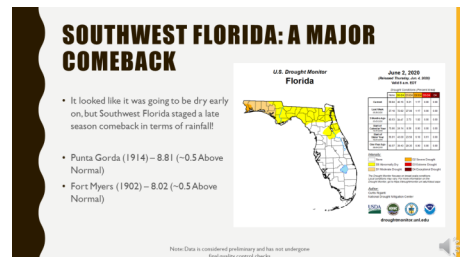
It was quite the historic start to hurricane season this year, with three named storms already by June 1st, the official start date! Tropical Storm Arthur developed in mid May just north of the Bahamas and impacted North Carolina. Tropical Storm Bertha then developed in late May over the Gulf Stream, making landfall in South Carolina and bringing impacts across portions of the Eastern US.

Tropical Storm Cristobal formed on June 1st in the Bay of Campeche, and lifted north over the central Gulf of Mexico. It might have made landfall in Louisiana on June 7th but we had a wide range of local impacts due to the storm. The constant southerly winds helped to bring tropical moisture over the state. That combined with the outer rainbands created flooding rain in west central Florida. Rainfall totals in parts Sarasota and Manatee counties over just a 72 hour period were around 10 inches! This caused multiple streets to flood and cars to be stranded in the area. Along with the flooding rain we also had to deal with the potential of tornadoes which are more likely on the outer bands of tropical systems. West central Florida had a total of three tornadoes during the event. The tornadoes were all EF-0. One was in Clearwater and caused multiple trees to fall, including one on a car, along Ridge Ave. Another tornado pushed through Oxford in Sumter County causing damage to roofs, a barn, and multiple trees down.

Since the start of the hurricane season, we have also seen Tropical Storm Dolly, a short-lived system that formed in the Gulf Stream waters offshore of the New England coast in late June.

The seasonal forecast is calling for an above average season, with 13 to 19 named storms (winds of 39 mph or higher), of which 6 to 10 could become hurricanes (winds of 74 mph or higher), including 3 to 6 major hurricanes (category 3, 4 or 5; with winds of 111 mph or higher). Despite this forecast, remember that it only takes one tropical system to change your life forever. So the best thing that you can do to help mitigate that is to be prepared! Be sure you have a plan if you will need to evacuate your home, and regardless of whether you will be evacuating or sheltering in place, be sure to have a supply kit ready to go with water, non-perishable food, medications, and other supplies needed to survive for a week.

Spring 2020 in Southwest Florida: A Roller Coaster

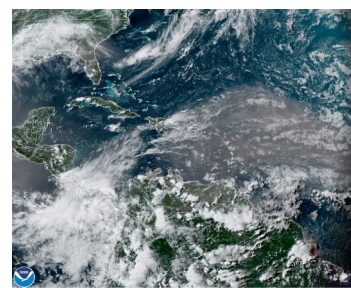


By: Austen Flannery

By mid-April, things were looking pretty bleak in Charlotte and Lee counties. Despite an overall pleasant weather pattern with warmer temperatures and sunny skies, it was not raining. This lack of rain was leading to reduced water levels, dry and dying lawns, and a heightened sense of concern for wildfires. Drought had taken hold. Spring is a climatologically dry time of year, and 2020 was shaping up to be one of the driest springs on record.

All of that changed, however, in late May. Several weather systems brought rounds of heavy rainfall that shattered those early expectations. By the end of May, the rainfall deficit was completely gone and there were no more concerns about drought. Official climate sites in Punta Gorda and in Fort Myers ended up recording above average rainfall totals for the season. This was much needed rain for Southwest Florida. Heading into the summer months, this puts the region in a good spot to stay on track for the year.

Tampa Bay area Ruskin Hydro Workshop 2020



By: Jen Hubbard

There's been a lot of talk in the news lately about Saharan Dust in the atmosphere, or what we call the Saharan Air Layer (SAL). The SAL is a mass of very dry, dusty air that forms over the Sahara Desert and moves over the tropical North Atlantic every 3 to 5 days. This is common through the late spring to early fall, with its peak period from late June to Mid-August. An outbreak, like what we are seeing now, is a larger mass that usually occupies a 2 to 2.5-mile-thick layer of the atmosphere with the base starting about 1 mile above the surface. These outbreaks reach farther to the west and cover vast areas of the Atlantic.

There are some benefits that we see from these SAL outbreaks. The dust particles in the air allow more of the longwave red-orange-yellow hues of the visible spectrum to filter into the atmosphere, providing longer lasting, dusky colors that cause vivid sunsets and sunrises. And the warmth, dryness, and strong winds associated with the Saharan Air Layer have been shown to suppress tropical cyclone formation and intensification. The SAL contains about 50% less moisture than the typical tropical atmosphere. This can weaken a tropical cyclone or disturbance by promoting downdrafts around the storm. Strong winds within the layer can substantially increase vertical wind shear and disrupt the storm's structure. Finally, the warmth within the layer acts to stabilize the atmosphere and suppresses cloud formation. The suspended mineral dust also absorbs sunlight, which helps maintain its warmth as it crosses the Atlantic Ocean.