National Weather Service | San Juan, Puerto Rico

The Whispering Trades

See Page 14

Photo Contest April Winner

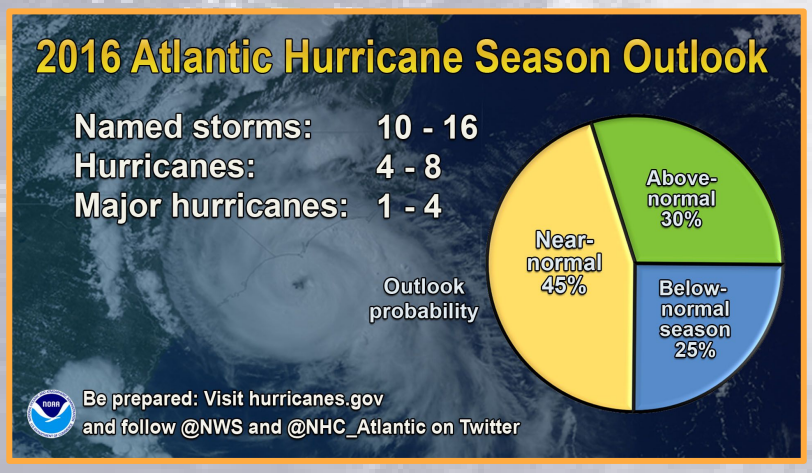
Karla Morales Photography

Volume 4, Issue 1 • June 2016

From the Corner of the MIC @ WFO San Juan

Summer is here again...

And with it, celebrations like San Juan Day on June 24 and Independence Day on July 4. These are festivities in which large crowds gather at the local beaches in Puerto Rico and the U.S. Virgin islands. During this time of the year we also see the development of daily afternoon showers and thunderstorms affecting portions of our forecast area with heavy downpours. As time progresses we move deeper into the hurricane season with tropical disturbances moving west across the islands every three to four days.



These disturbances have the potential of bringing with them widespread rainfall. A few of these systems will develop into full blown tropical cyclones as we approach the peak of the hurricane season in August and September. Some cyclones could pass close or even directly impact the local islands. The NOAA outlook for the Atlantic basin hurricane season this year calls for a normal to slightly above normal season with 10-16 named storms, out of those 4-8 hurricanes and out those 1-4 major hurricanes.

From the Corner of the MIC @ WFO San Juan

Regardless of the numbers, our message is always the same, It does not matter how active or inactive a season is expected to be, it only takes one. We should always be prepared and review our family preparedness plan before the beginning of the season. The National Weather Service Forecast Office in San Juan exhorts you to enjoy this summer season responsibly. You should be able to enjoy the sun and the white sand beaches and, at the same time, be aware of the possible dangers that you could face. We want to continue to increase the awareness of tropical cyclone threats and also put new emphasis on other threats that are far more common. Rip currents are the leading surf hazard for all beachgoers. Rip currents can occur at any surf beach with breaking waves and these currents can sweep even the strongest swimmer out to sea. Too many deaths every year occur due to rip currents along the local islands beaches.

Summer is also the peak season for one of the deadliest weather phenomena--lightning.

There is no safe place outside when thunderstorms are in the area. If you hear thunder, you are likely within striking distance of the storm. For organized outdoor activities, the National Weather Service recommends that organizers have a lightning safety plan, and that they follow the plan without exception. **Remember, "When thunder roars, move indoors"**

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70 percent likelihood of 10 to 16 named storms

I invite you to keep aware of the latest weather conditions and forecasts by visiting our webpage at weather.gov/sju. I hope you find the following articles in this 2016 summer version of our WFO San Juan Newsletter, *The Whispering Trades*, informative.
- Roberto García-Hiraldo, MIC

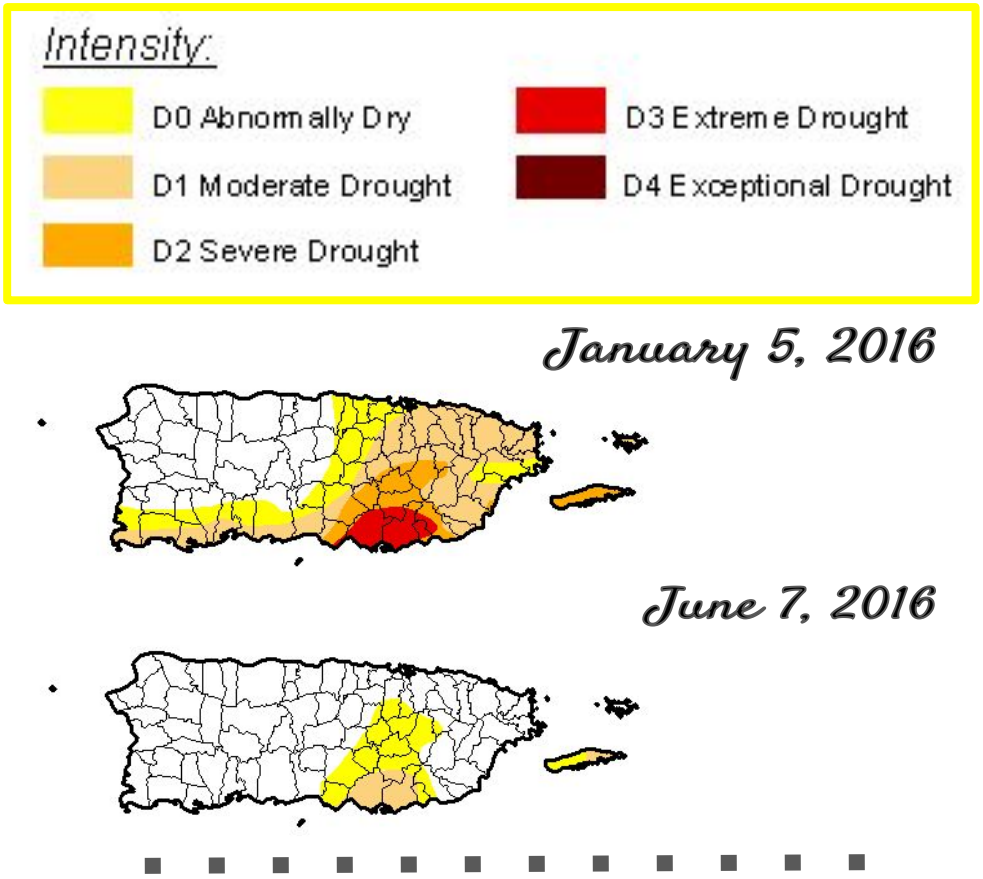
Year-to-Date Climate Highlights

By: Odalys Martinez

Rainfall

Near to above normal rainfall has been observed across most Puerto Rico including in and around the San Juan International Airport. These rains lead to major improvements in drought conditions.

However, long term deficits continue across areas in the eastern half of the island and therefore, in the vicinity of Salinas and Guayama moderate drought conditions are still observed. Across the U.S. Virgin Islands, near to below normal rainfall has been observed at the Cyril E. King Airport (IST) in San Thomas and Henry E. Rohlsen Airport (ISX) in Saint Croix.



Temperatures

Near to above normal temperatures have been observed across the area throughout the period. See table below for new records year-to-date.

	January	February	March	April	May	Year to date
SJ Area	5th warmest 78.7 °F and 9th driest 1.60"	7th warmest 78.9 °F	---	---	---	9th warmest 79.7 °F
IST	---	---	6th warmest 80.7 °F	6th warmest 82.0F	2nd warmest 83.7F	3rd warmest 80.9 °F
ISX	8th warmest 78.8 °F	5th warmest 79.2 °F	5th warmest 80.0 °F	10th warmest 80.6F	---	3rd warmest 80.1 °F

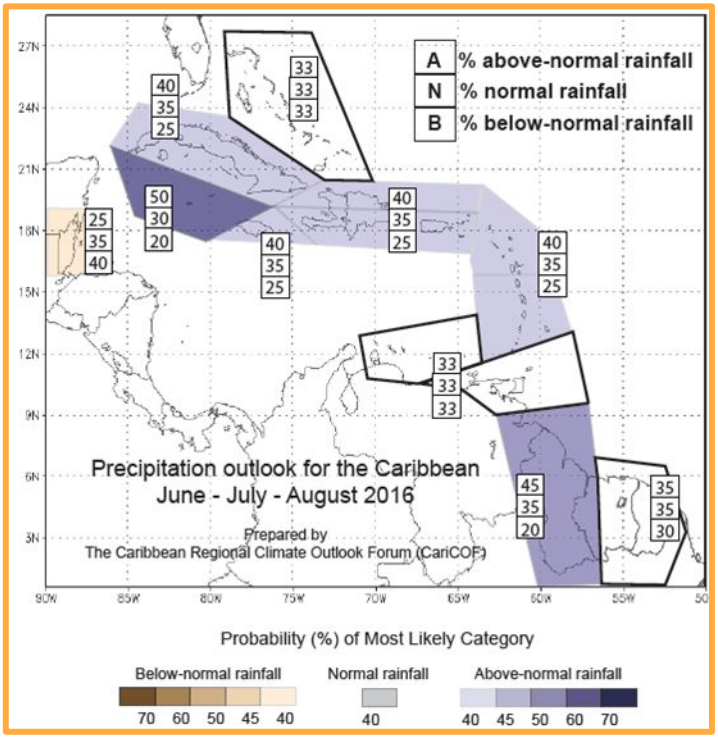
Year-to-Date Climate Highlights, cont.

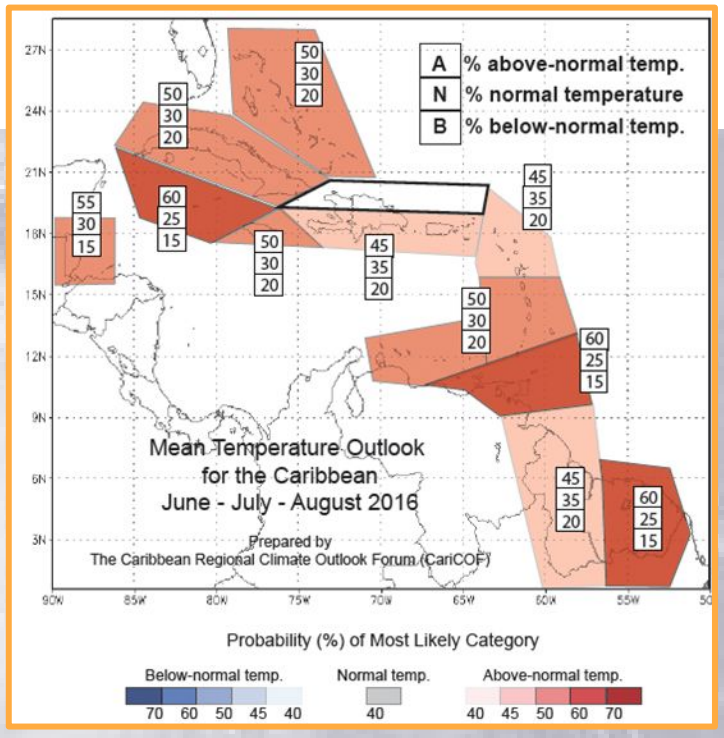
By: Odalys Martínez

What to expect?

All the models indicate La Niña conditions by the 3-month period of June-July-August increasing to around 75% for September-October- November.

La Niña increases chances of wetter than usual conditions in much of the region; therefore, there is a higher chance of normal to above normal rainfall across the local islands. Normal to above normal temperatures are also expected across the region, as we are moving into a period that is increasingly warm and humid.





http://rcc.cimh.edu.bb/long-range-forecasts/caricof-climate-outlooks/

2016 Caribbean Hurricane Awareness Tour (CHAT)

By: Ernesto Morales

The National Weather Service, emergency management agencies, several media outlets, families and guests all welcomed the 53rd Weather Reconnaissance Squadron in the WC 103J Hercules aircraft on April 16, 2016. The 53rd Weather Reconnaissance Squadron, known as the "Hurricane Hunters", came to Puerto Rico for the 2016 Caribbean Hurricane Awareness Tour, which took place in the Merceditas Airport in Ponce, PR on April 16, 2016. The last time the "Hurricane Hunter" aircraft visited the Ponce area was in April 2007.

Amongst the squadron personnel

Lt. Col. Brad Boudreaux (Commander)and Lt. Col. Jon Talbot (Chief)). Also, Dr. Rick Knabb (Director of the National Hurricane Center), Dr. Lixon Avila (Senior Hurricane Specialist in the Hurricane Specialist Unit (HSU)), and Gladys Rubio (Forecaster in the Tropical Analysis and Forecast Branch (TAFB)).

Aircraft Civil Air Patrol's and the Puerto Rico Police Department unit, Fuerzas Unidas de Rapida Acción (FURA) also demonstrated their roles and duties in emergency situations on the tour. Additionally, the Salvation Army actively participated while providing food and water for the public. Like they always do in these types of events, the Federal Emergency Management Agency (FEMA) participated, with local staff orienting attendees about their mission. Major media outlets were present with constant live reports and interviews throughout the event.

2016 Caribbean Hurricane Awareness Tour (CHAT), cont.

This year marks the 73rd year the Air Force Reserve Command's WRS has supported the National Hurricane Center and United States Hurricane Warning Program and helped mitigate the hurricane threat within the Atlantic Basin.

The public had the opportunity to interact with Roberto Garcia (NWS San Juan Meteorologist In-Charge), Ernesto Morales (NWS San Juan Warning Coordination Meteorologist) and other local and state emergency agencies. For example, the Puerto Rico Emergency Management Agency, also known as PREMA, was present with the local department, as well as the Port Authority Emergency Management.

More than 12,000 individuals arrived to participate in the 2016 Caribbean Hurricane Awareness Tour, whose purpose was to raise awareness of the impacts of tropical cyclones. The public was invited to experience the logistics and equipment inside the WC-103J aircraft and learn about the roles and duties of the squadron members during the missions. Here, the public had the opportunity to explore and interact with the squadron and personnel while learning about the details of the mission, as well as the impacts and dangers of tropical cyclones.

The planning for this large event began on January 2016 and after several interagency meetings, a logistical plan was developed to accommodate all the event needs. The Puerto Rico Police department was responsible for transit control across the event area and the 24-hour airplane security at the Merceditas Airport. PREMA was responsible for all event operations including water distribution, ground transportation and entrance security.

Overall, and from an operational standpoint, the event was a great success and it was a great example of teamwork between all agencies involved in the event.

Storm Surge

By: Carlos M. Anselmi-Molina

2016 Atlantic Hurricane Season extends from June 1st to November 30th, and the local islands are inside the Caribbean tropical cyclone corridor. Although, several technological advances have been made to predict hazards associated with tropical cyclones (TC), many challenges are still present. The preparation and understanding of the risks associated with TC is the best way to minimize their impacts. Storm surge is one of the hazards associated with the landfall of cyclones. For that reason, we would like to explain what is it as well as factors that determine the severity.

Storm surge is the abnormal rise of water generated by a storm, over and above the predicted astronomical tide (Figure 1). On the other hand, storm tide refers to the combined effect on the water level height due to the contribution of storm surge and astronomical tide. This rise in water level can produce extreme coastal flooding creating life threatening conditions and significant destructions of properties and natural resources along the coastline (Figure 2). Therefore, coastal communities need to understand the importance of being prepared during the Hurricane Season.

In order to improve our products, a multidisciplinary team composed by members from the Academia, Federal Government, Local Agencies, the National Weather Service (NWS)-National Hurricane Center (NHC) and the local staff of your NWS-Weather Forecast Office-San Juan (WFO-SJU), are working together to produce a new set of tools to identify which areas are susceptible to the effects of storm surge. However, these products need to be used in conjunction with all the TC products issued by your NHC and WFO-SJU. In general, these tools will help the emergency managers during the decision-making process to make the most informed decision ahead of time and to minimize the impacts associated with TC threats.

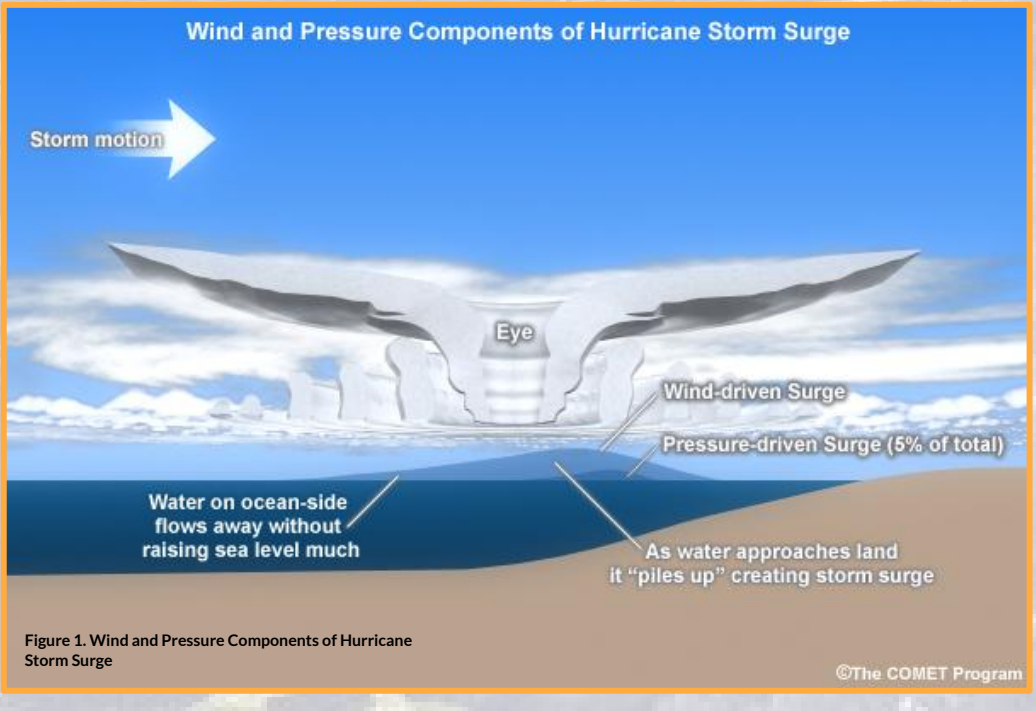


Figure 1. Wind and Pressure Components of Hurricane Storm Surge

Storm Surge, cont.

By: Carlos M. Anselmi-Molina

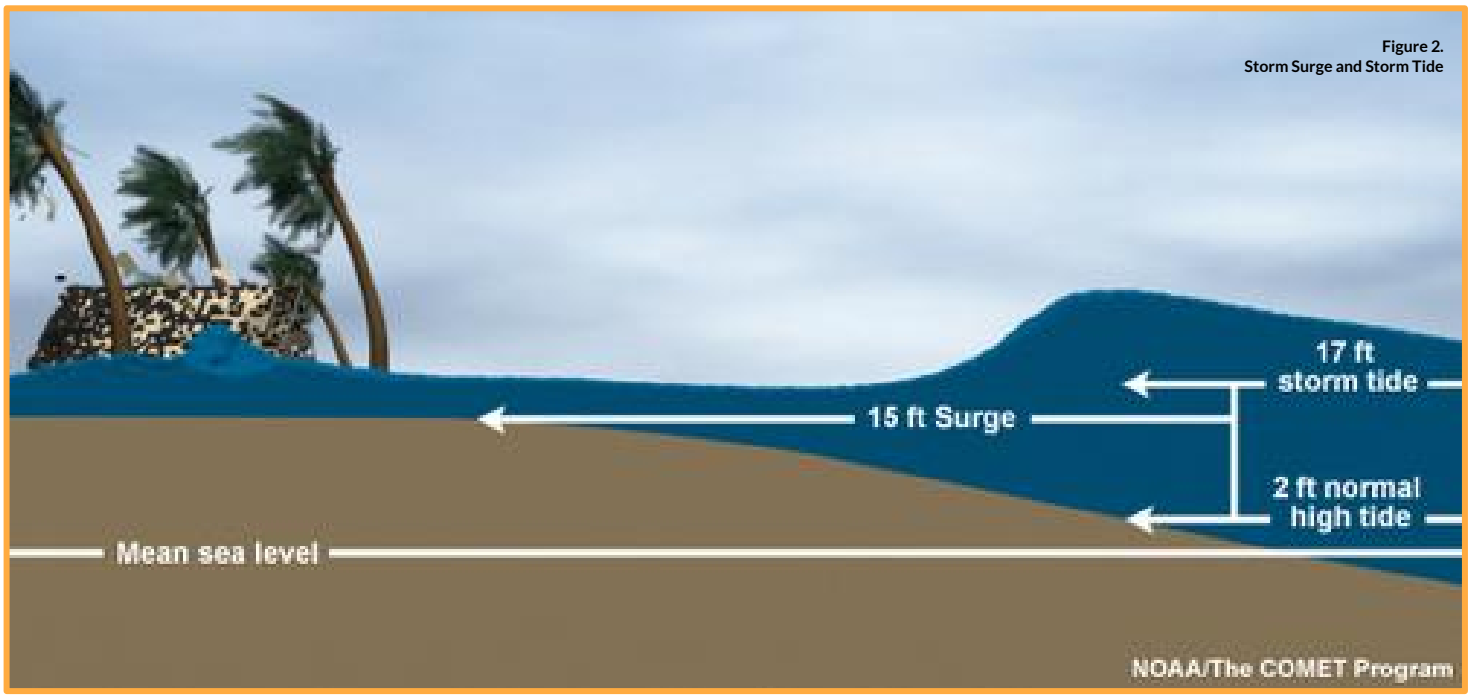


Figure 2.
Storm Surge and Storm Tide

During the Hurricane Season, make a well-informed decision: "*BE PREPARED*"

Several factors determine how severe a storm surge would be, which makes the forecast process even more challenging. The factors that determine the severity of a storm surge are: storm intensity, storm size, forward speed, angle of approach to the coast, local coastal morphology, tropical system central pressure, and among others.

The combination of all aforementioned parameters will produce a unique storm surge for each individual TC. Therefore, it is vital that preparations should be made ahead of time to minimize the possible threats on the dawn of a TC.

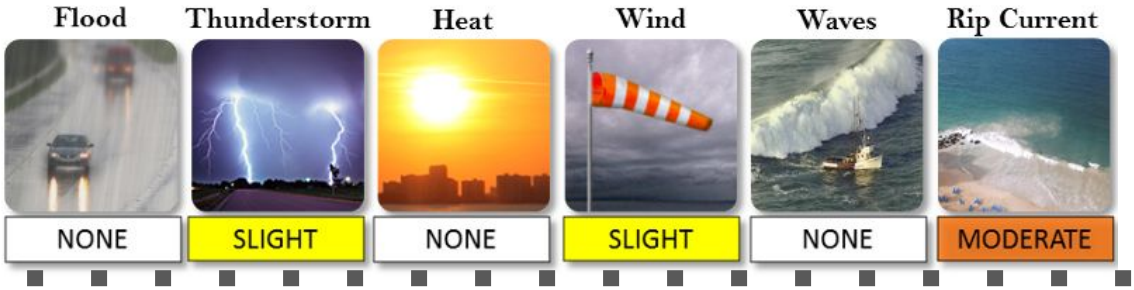
For more information about this hazard, visit the following pages:

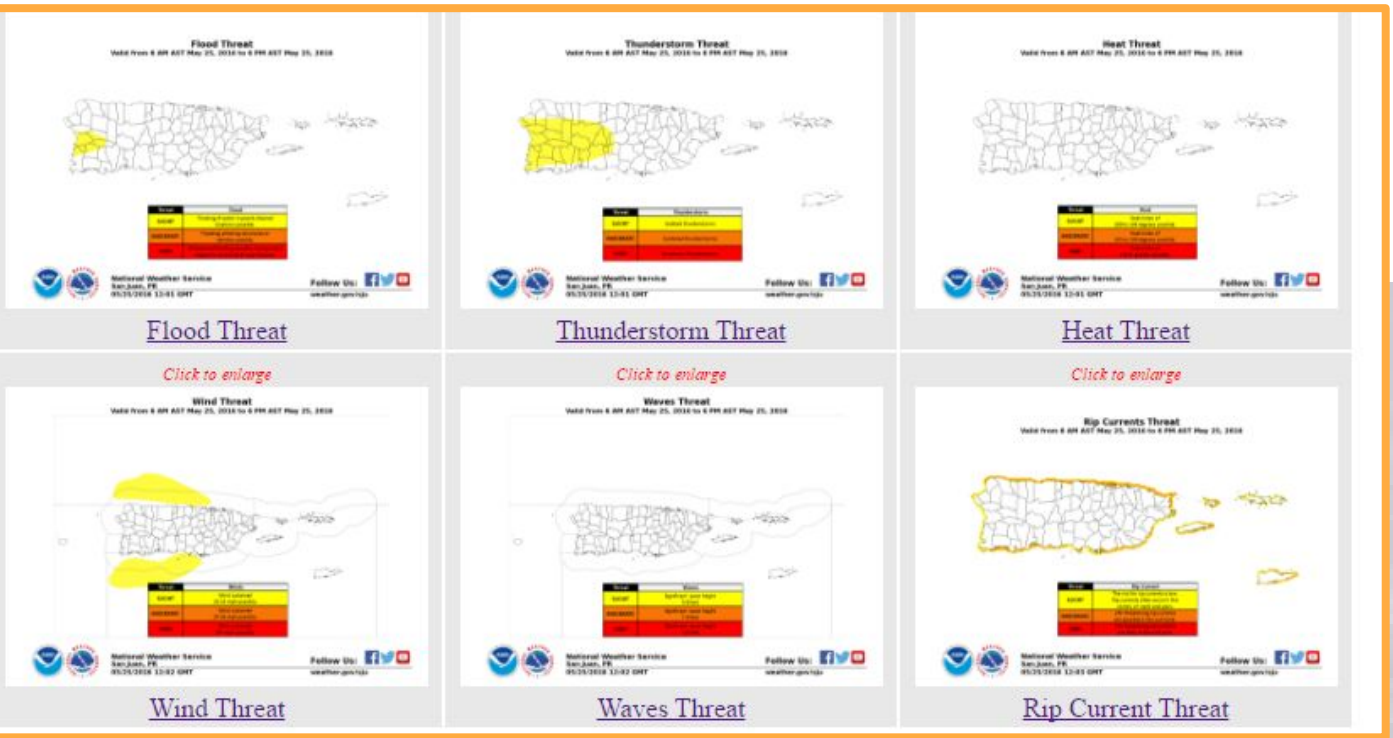
http://www.nhc.noaa.gov/surge/
https://www.meted.ucar.edu/
http://www.stormsurge.noaa.gov/
www.weather.gov/sju

The gHWO

By: Ernesto Rodriguez

The National Weather Service in San Juan, PR has developed a new graphical product to display and communicate hazardous weather conditions across the forecast area. Alerting the public to possible hazardous weather is core to the Weather Forecast Office (WFO) mission. Residents, tourists, commercial and government users all desire and expect information about phenomena that may threaten the local region. While the NWS text-based Hazardous Weather Outlook (HWO) has played a role in communicating potential threats, at times our core customers need a spatial representation of the threats in their area.





The Graphical Hazardous Weather Outlook (gHWO) product is designed to provide decision makers with information about the level of risk posed by Floods, Thunderstorms, Heat, Wind, Waves and Rip Currents for the day. The GHWO has four qualifiers to specify the threats: none, slight, moderate and high. This graphical product provides important information that's easily understood and interpreted. The information will aid in preparedness and readiness in the community. This graphical approach to weather hazards is issued every day in conjunction with the text-based Hazardous Weather Outlook product. The Graphical Hazardous Weather Outlook (gHWO) is available daily at: http://go.usa.gov/cet6w

A Tsunami Minute (and 46 seconds)

By: Walter Snell

Over 330,000 people participated in the Caribe Wave 16 exercise that simulated an 8.4 earthquake in the Caribbean Sea on 17 March 2016 north of Venezuela and an 8.7 magnitude earthquake affecting the shores of Haiti and the Dominican Republic. It's no surprise that Puerto Rico had the largest number of participants—over 140 thousand according to Christa von Hillebrandt-Andrade, NOAA Caribbean Tsunami Warning Program, where interest is high because of the multiple exposures the island has from all directions.

Simulated messages were sent from the Pacific Warning Tsunami Warning Center (PTWC). Sirens and communications systems were tested. Schools practiced evacuations, emergency managers walked through tabletop exercises and actual rehearsals for logistics and drills so that they too would be ready in case disaster struck.

In all, Caribe Wave 2016 validated the readiness of the Caribbean and adjacent regions, enhanced the familiarity of the participants with the products delivered by the PTWC and validated the receipt and transmission of those products.

If you missed Caribe Wave 2016, here's a short and entertaining "fast-draw" video that captures what you need to know and do about tsunamis: https://www.youtube.com/watch?v=x0GX_kc7JZo

CARIBE WAVE

Okay, now you know what to do. But do you know where to go?
The National Tsunami Hazard Mitigation Program has maps that you can use to find out if you live, work or play in some area that could be affected by tsunamis, and if so where to go to get out of harm's way. Just follow the links on this page to select the area you are interested in whether in Puerto Rico or the U.S. Virgin Islands and find the maps for your area!

http://nws.weather.gov/nthmp/maps.html

Happy hiking!

COOP @ St. Croix, USVI

By: Amaryllis Cotto & Rosalina Vazquez Torres

On the 25th and 26th of April 2016, NWS San Juan WFO employees Rosalina Vazquez and Amaryllis Cotto; visited the beautiful island of St. Croix of the U.S. Virgin Islands for the NWS' yearly COOP (Cooperative Observer Program) station inspection. During the inspections, they were able to analyze the current conditions of every instrument, verify and certify that they were all within operational standards. They also had the opportunity to speak with each of the station's observers, answer questions and give any help needed. They conducted several training sessions and met with new enthusiasts.

To learn more about NOAA NWS' COOP, please visit http://www.nws.noaa.gov/om/coop/

What is COOP and what does it provide? A cooperative station is a site where observations are taken or other services are rendered by volunteers or contractors. The observers generally record temperature and precipitation values and electronically send those reports daily to the NWS and the NOAA's Centers for Environmental Information (NCEI). Many cooperative observers provide additional hydrological or meteorological data, such as evaporation or soil temperatures. Volunteer weather observers conscientiously contribute their time so that observations can provide the vital information needed to learn more about the floods, droughts, heat and cold waves affecting us all. The data are also used in agricultural planning and assessment, engineering, environmental-impact assessment, utilities planning, and litigation. Coop data plays a critical role in efforts to recognize and evaluate the extent of human impacts on climate from local to global scales (www.nws.noaa.gov).

Fire Weather Program

By: Ian Colón-Pagán

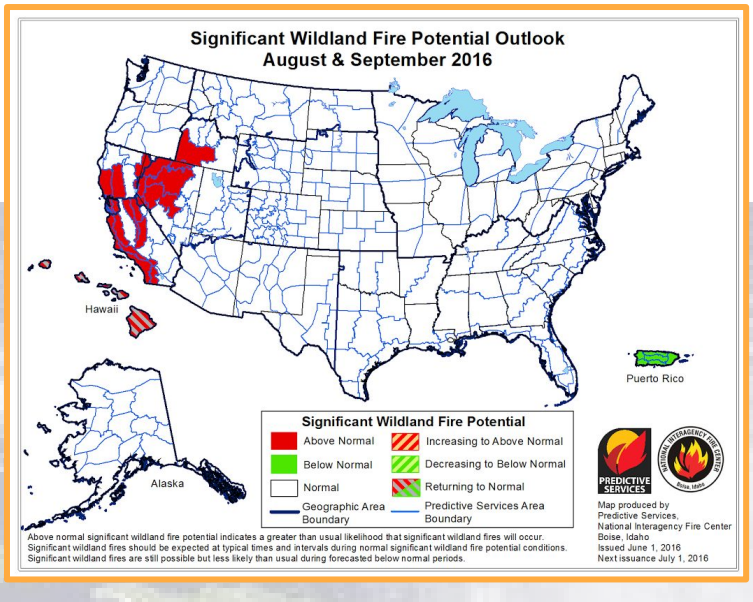
Background

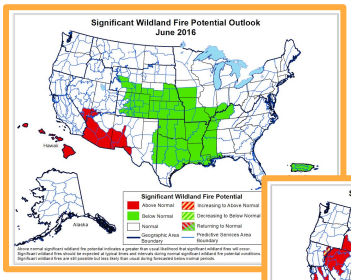
The NWS/WFO San Juan office provides services to 14 zones across Puerto Rico and the U.S. Virgin Islands. These zones were identified by the relationship between fire occurrences and their unique wildland fuel, land use, and climate. In order to predict the risk of fires, Red Flag Statements, Watches, and Warnings products are issued for decision-makers following a set of pre-established criteria that includes wind, relative humidity, and soil moisture.

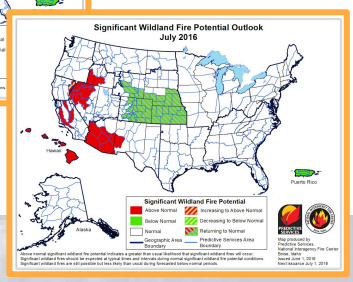
For more information, refer to the our Office's fire weather webpage http://www.srh.noaa.gov/sju/

Outlook

The significant wildland fire potential outlook for our suggests normal to below-normal conditions between June and August.







Although strong winds and high temps may enhance fire activity, an above-normal atmospheric moisture content and the chance of wetting rains may neutralize or suppress its potential.

Safety

PREPARE

- Be aware of, and comply with, any local ordinances or permit requirements pertaining to outdoor burning.
- Keep vehicles or any outdoor equipment well maintained and use them responsibly.
- Make your home and landscaping fire resistant.
- Turn off vehicles while standing near dry vegetation areas.

AVOID

- Throwing cigarettes on the ground or into vegetation.
- Using consumers fireworks.
- Camp fires, brush fires, fire pits, chimneys, or outdoor fireplaces.
- Burning on windy, dry days.
- Using gasoline or other flammable or combustible liquids to start a fire.

2016 Media Workshop

By: Ernesto Morales

On May 5 2016, the National Weather Service in San Juan invited the local media for the 2016 Media Workshop. After a warm welcome for our colleagues by our Meteorologist in Charge Roberto Garcia we proceeded with various workshop sessions. One of our Senior Forecasters, Ernesto Rodriguez talked about our new Graphical Hazardous Weather Outlook (see page 3). Senior forecaster Odalys Martinez also gave a presentation about our climate products and introduced our future products for excessive heat.

The Warning Coordination Meteorologist, Ernesto Morales, talked about our local tropical products and the 2016 Hurricane Season Outlook. General Forecaster Carlos Anselmi gave a presentation summarizing all of our marine products while Senior Forecaster Felix Castro talked about hydrology products and the importance of reporting flooding events. Amaryllis Cotto gave an overview of how we use social media during office operations and best practices of how to report weather events using Facebook and Twitter. General forecaster David Sanchez gave an orientation to the reporters of how to get an NWSchat account and the importance of this communication tool. In the last session we had an open table discussion about how to work together to reach our goal of...

"saving life and property".

WFO San Juan in BLAST: A Leadership Program Gem

By: Félix Castro

"I strongly believe, Southern Region BLAST will be the path for future leadership programs across the NWS. This experience is one-in-a-million." -Félix

Félix Castro, Senior Forecaster at WFO San Juan was selected to attend the "2016 Building Leaders for a Solid Tomorrow (BLAST) program.

Félix states participating in BLAST has been a life changing experience and an excellent opportunity "to grow as a professional and a better human being".

From left to right, Mike Coyne-Acting Deputy Regional Director, Lead Forecaster Félix Castro, representing NWS-San Juan PR, and Steven Cooper-Southern Region Director.

If you want to learn more about BLAST you can access it at: http://www.srh.noaa.gov/blast/blast.html

WFO San Juan, PR Photo Contest

By: Amaryllis Cotto

The National Weather Service in San Juan is now holding a photo contest the first three days of every month for the public. The first photo contest was introduced on April 1st 2016. This event offers the public a location where they can share their love for meteorology and appreciation of the environment.

The contest is dedicated to showcasing the beautiful weather and landscape of the Caribbean, which consists of areas located in Puerto Rico, Culebra, and Vieques, as well as the U. S. Virgin Islands. A winner is chosen every month via an anonymous voting poll open to the entire NWS San Juan staff. The winning image is then chosen as the cover photo of the NWS San Juan Facebook page for the remainder of the period.

A Closer Look Inside Our Office- WFO San Juan Employees

By: Xiomara Cruz

During this fiscal year 2016, WFO San Juan has welcomed a new employee and has said farewell to two assets of our office. Needless to say, we are more than honored to have such successful professionals among us and although saying farewell isn't the easiest task, we are extremely content to have been part of their lives and wish them the best.

Transferred

Althea Austin-Smith

Service Hydrologist for over 10 years was selected as a Senior Hydrologic Forecaster in Western Gulf River Forecast Center on 03/06/2016.

Hired

Gabriel Lojero

Hired on 02/21/2016 as a Met Intern.

Graduate Student from the University of Nebraska at Lincoln.

Retired

Jose A. Estrada (Tony)

Retired on 04/30/16 from a 39 year career in the Federal Government.

NWS Learn While Having FUN!

WHO can tell you how many feet a hurricane storm surge is above normal high tide?

WHO knows how many times lightning can strike a person or thing?

WHO knows where to go when a flash flood hits?

PLAN!T NOW

Owlie knows, that's WHO!

WWW.YOUNGMETEOROLOGIST.ORG

For more information, visit:
http://youngmeteorologist.org/about-ymp/

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