

# *Florida Thunderstorm Season*



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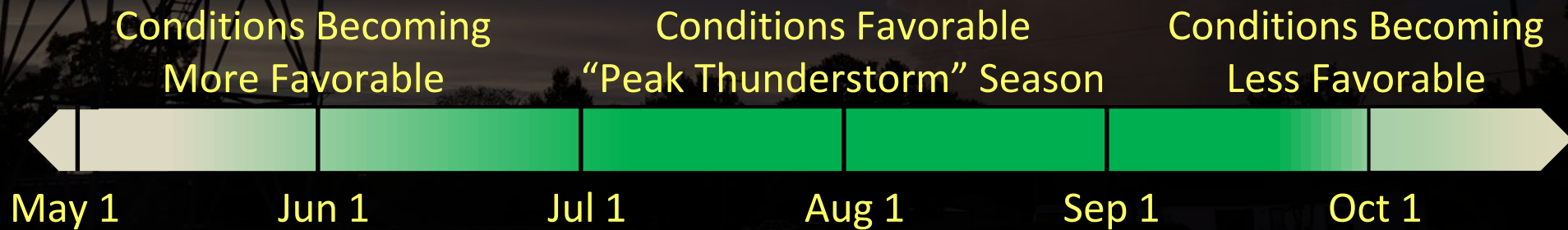
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# Florida Thunderstorm Season Basic Ingredients

## Thunderstorm season in West Central and Southwest Florida is active when...

- Bermuda High sets up
- Sea surface temperatures surpass 82°F (28°C) offshore, not just along the coast
- Moisture aloft increases
- Surface dew points increase into the 70s

These conditions usually begin to come together in late May/early June and then decline in late September/early October. 55% to 70% of our annual rainfall typically falls during June through September.





# Florida Thunderstorm Season

Once all of the previous ingredients are in place the next biggest factor in determining the chance, location, and timing of the daily summer thunderstorms is the low level (synoptic) winds. The interactions between the low level wind flow, and the various smaller scale sea-breezes, lake-breezes, and river-breezes, which form daily across the state, lead to our summer thunderstorms.



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# Florida Thunderstorm Season

Therefore, this study was done to help everyone, from the public, to private, and government organizations better understand where and when the greatest threat for these summer thunderstorms can be expected on any given day.

Based on the common patterns of the subtropical ridge, meteorologists at the National Weather Service Forecast Office in Ruskin, FL. identified eight wind patterns or "Flow Regimes" and produced high resolution spatial and temporal probability of precipitation (PoP) climatologies for each across the southeast United States, spanning the years 2002-2019.



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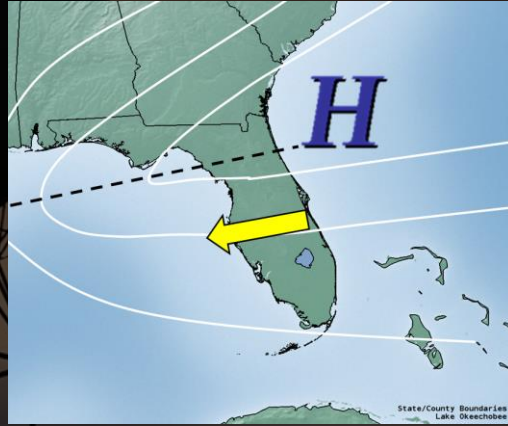


# Florida Thunderstorm Season Regimes

Regime 1  
Light and Variable



Regime 2  
E/NE 5 - 10 knots



Regime 3  
E/NE > 10 knots



Regime 4  
SW/W 5 - 10 knots



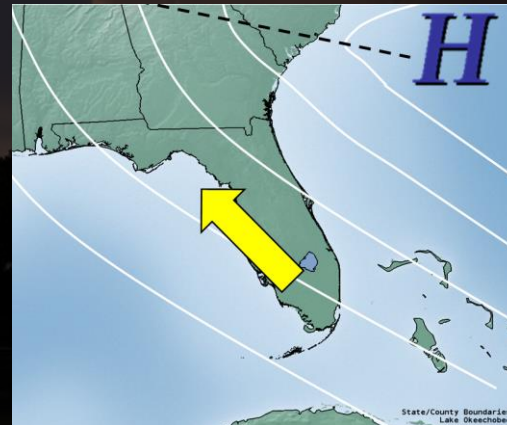
Regime 5  
SW/W > 10 knots



Regime 6  
S/SE 5 - 10 knots



Regime 7  
S/SE > 10 knots



Regime 8  
NW/N 5 - 10 knots



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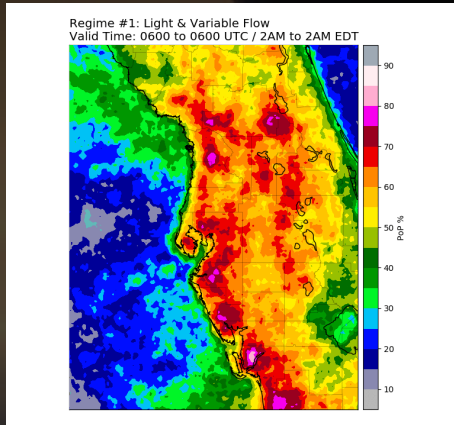


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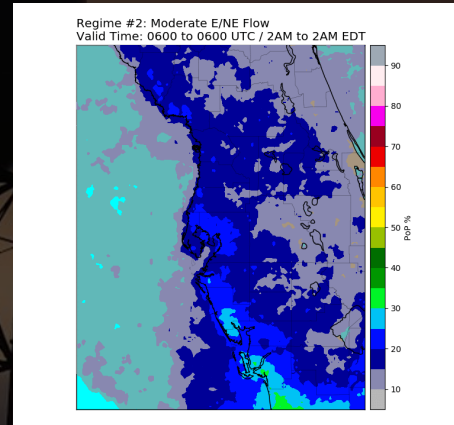


# Florida Thunderstorm Season Regime 24-Hour PoPs

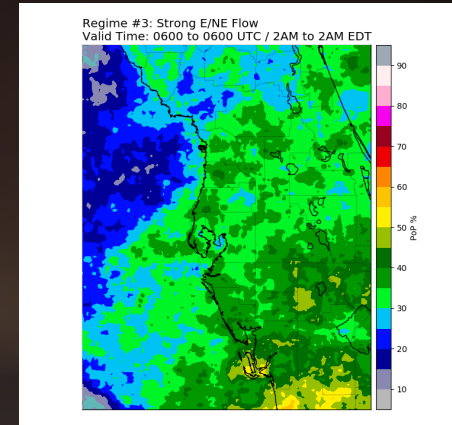
**Regime 1**  
**Light and Variable**



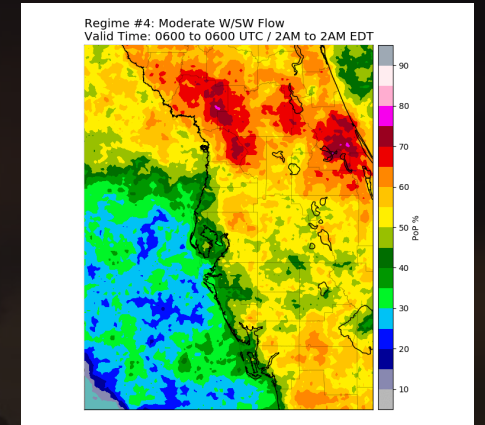
**Regime 2**  
**E/NE 5 - 10 knots**



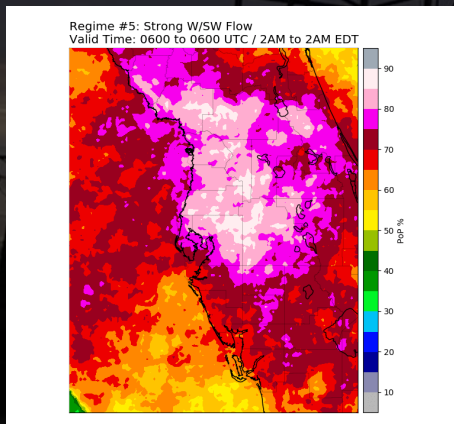
**Regime 3**  
**E/NE > 10 knots**



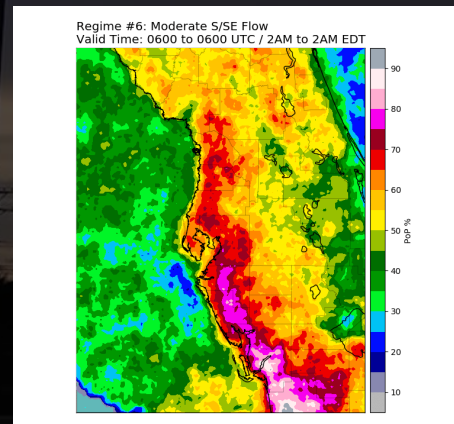
**Regime 4**  
**SW/W 5 - 10 knots**



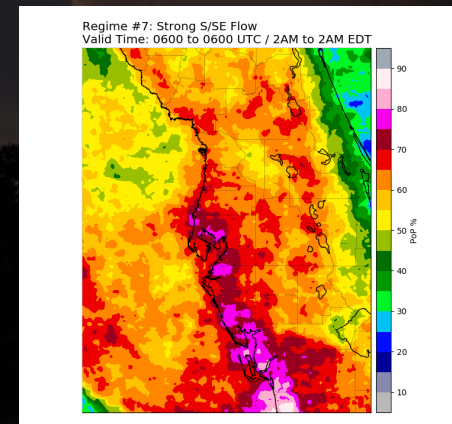
**Regime 5**  
**SW/W > 10 knots**



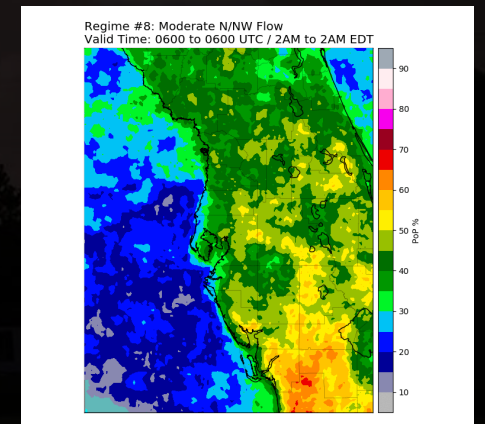
**Regime 6**  
**S/SE 5 - 10 knots**



**Regime 7**  
**S/SE > 10 knots**



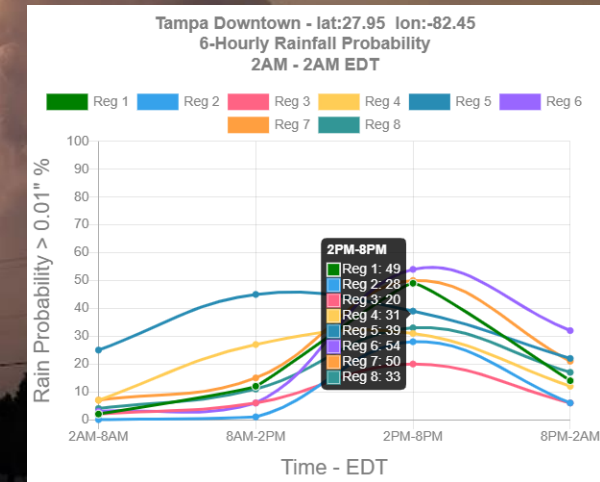
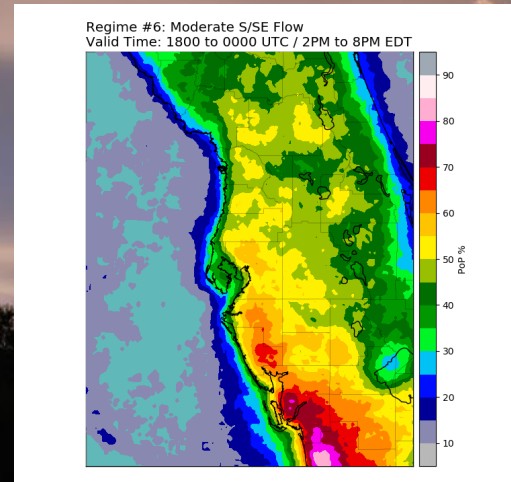
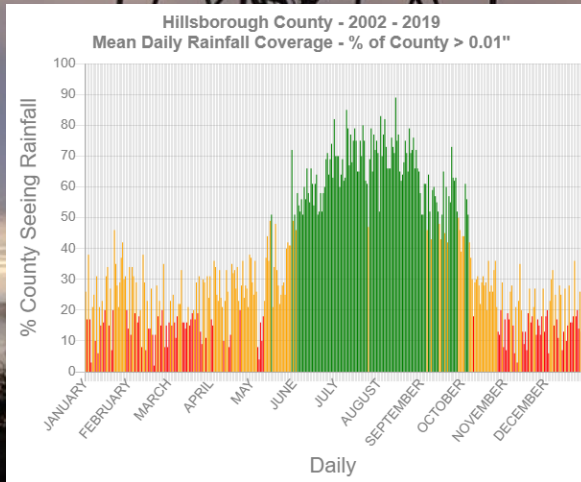
**Regime 8**  
**NW/N 5 - 10 knots**





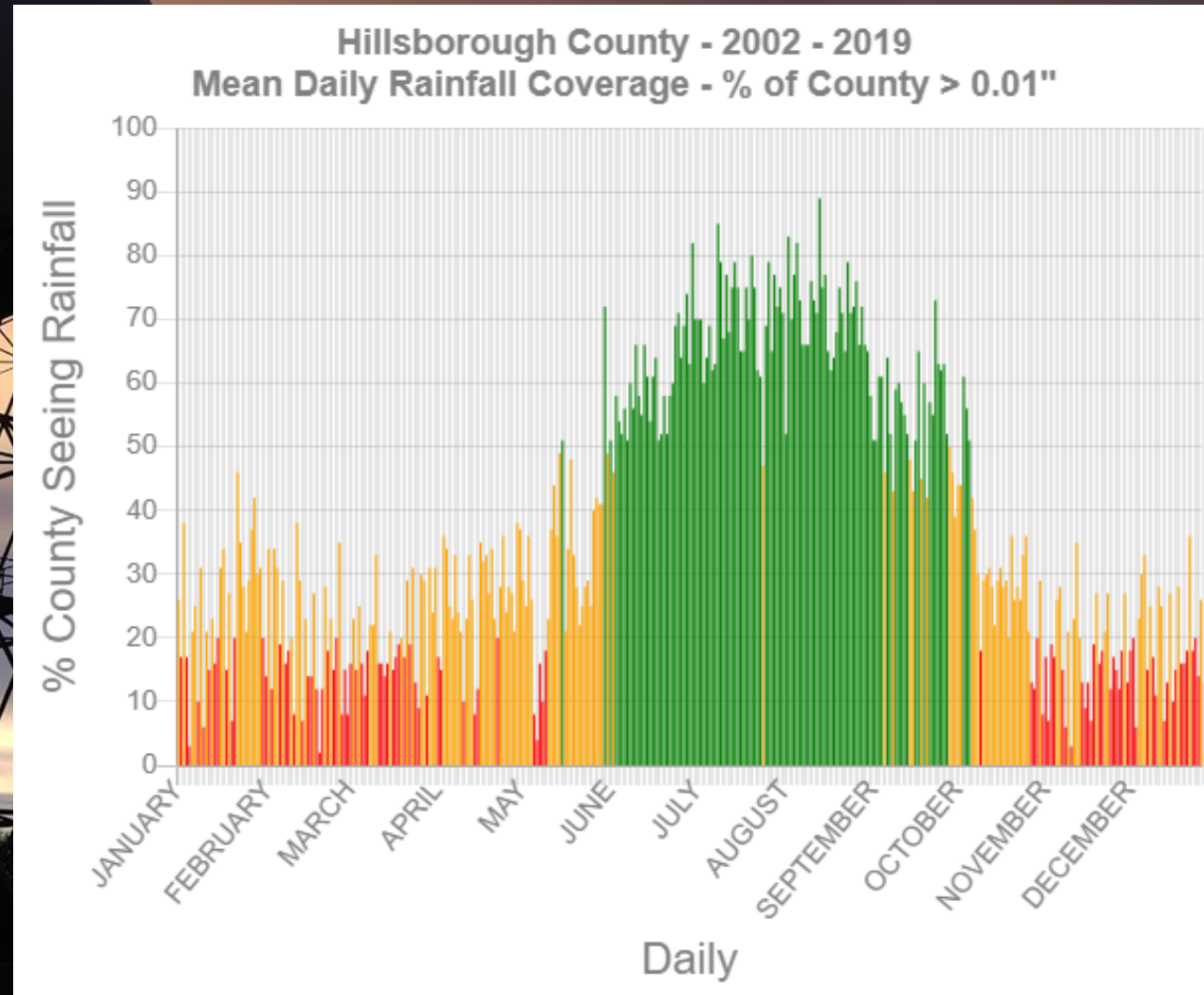
# Florida Thunderstorm Season Graphics

Using the common eight regime patterns, thunderstorm season graphs, timing maps, and point graphs for NWS county warning areas, media markets, counties, and individual cities across the entire state of Florida were created.



# Florida Thunderstorm Season – Wet Season Graph

**Wet Season  
Graph for  
Hillsborough  
County**



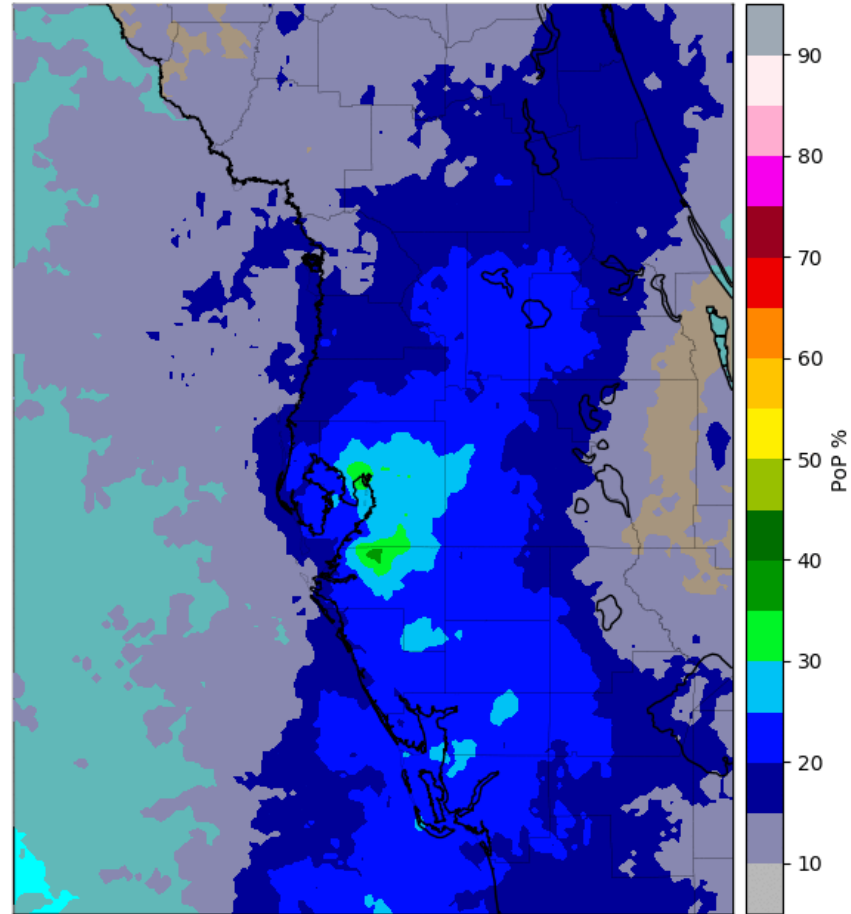
**Daily  
Probability  
of > 0.01 inch  
of rain**



# Florida Thunderstorm Season - 2D Maps

## Regime 6 6-Hour Maps

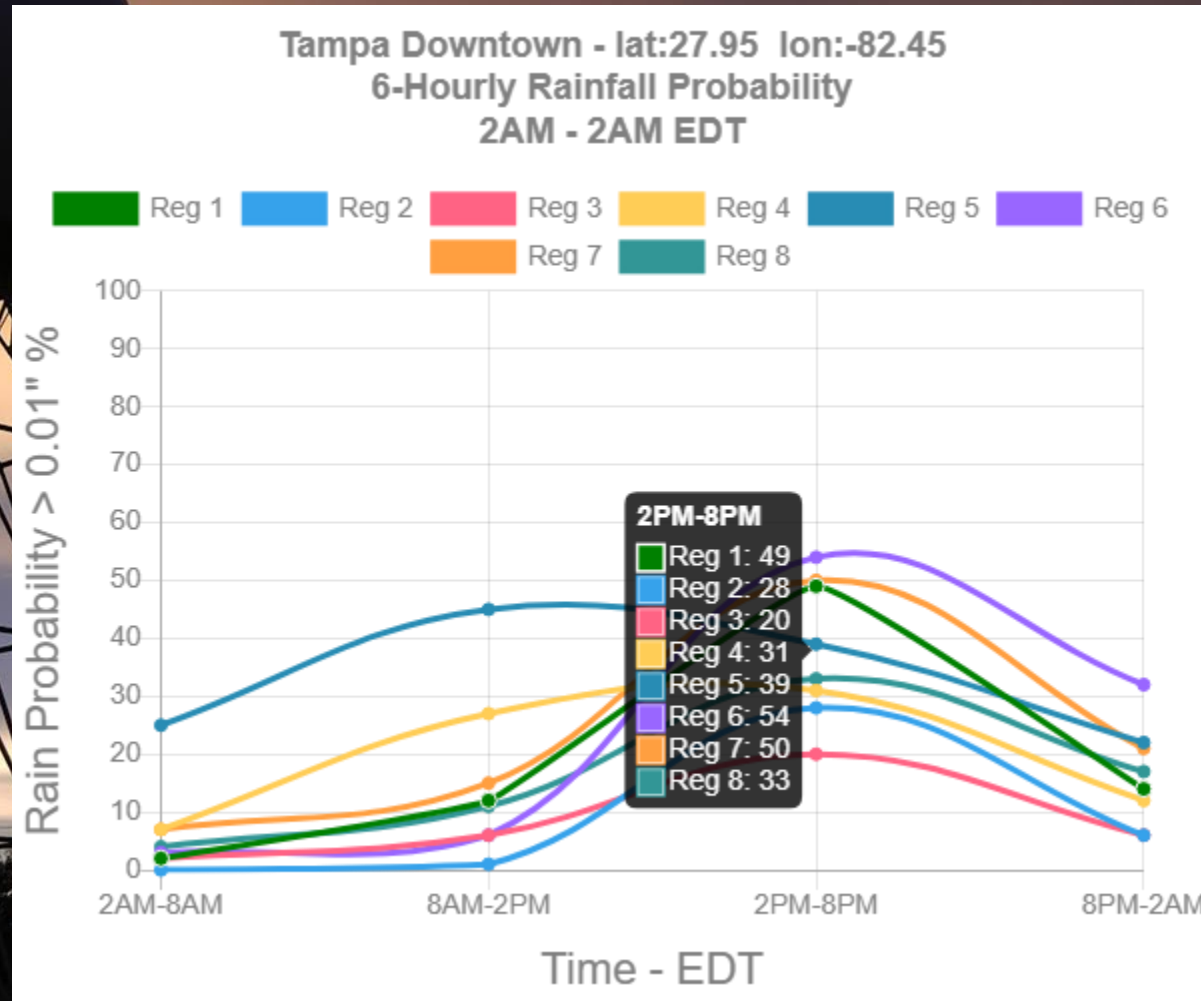
Regime #6: Moderate S/SE Flow  
Valid Time: 0000 to 0600 UTC / 8PM to 2AM EDT



Probability of  
> 0.01 inch  
of rain in the  
6-hour period  
indicated

# Florida Thunderstorm Season – 6-Hour Point Graph

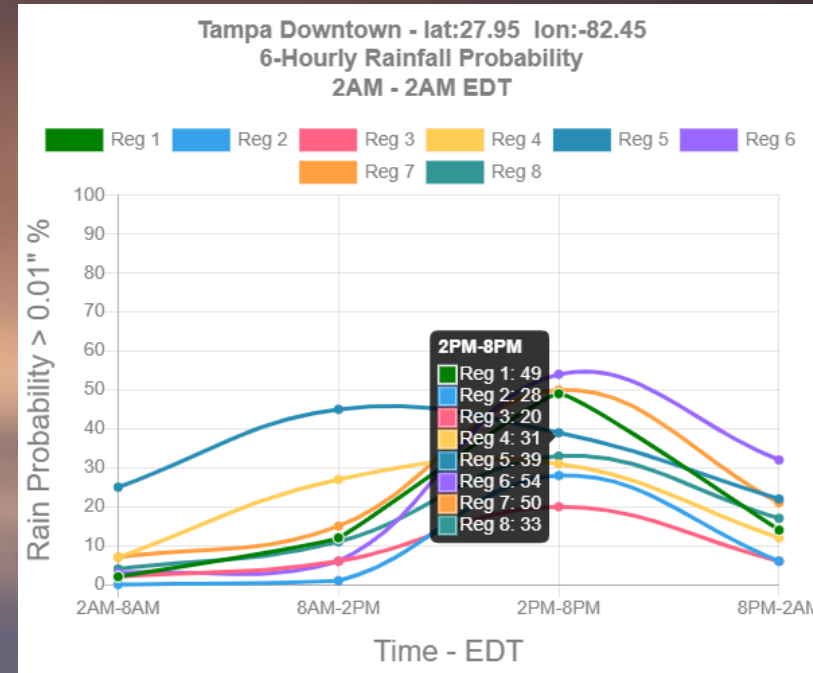
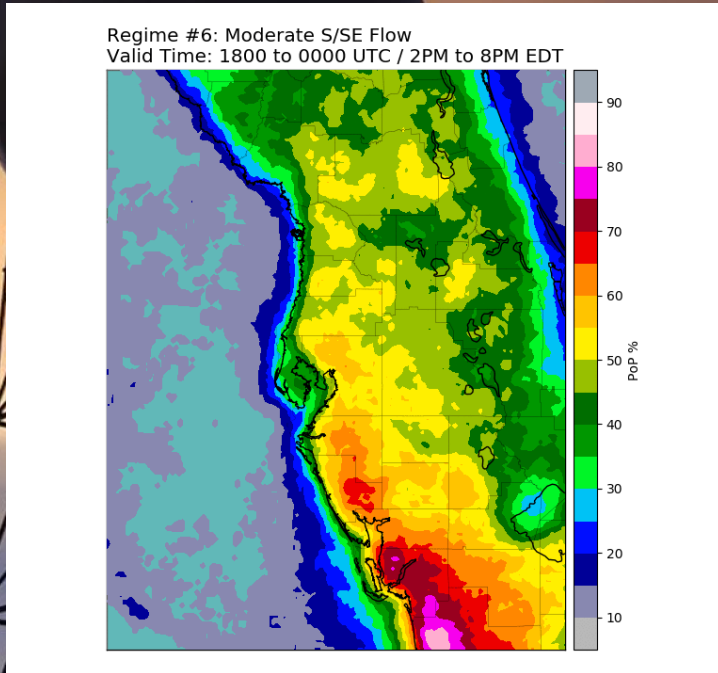
## Point Graph for Tampa Downtown



6-Hour  
Probability  
of > 0.01 inch  
of rain based  
on regime



# Florida Thunderstorm Season Graphics



The timing maps and point graphs above come in several different time ranges from 3-hour up to 24-hour.

# Florida Thunderstorm Season

In the near future we hope to have the Regime number for today and the next day displayed within the Thunderstorm Climatology web pages so you can quickly know which maps/graphs to view on those days.



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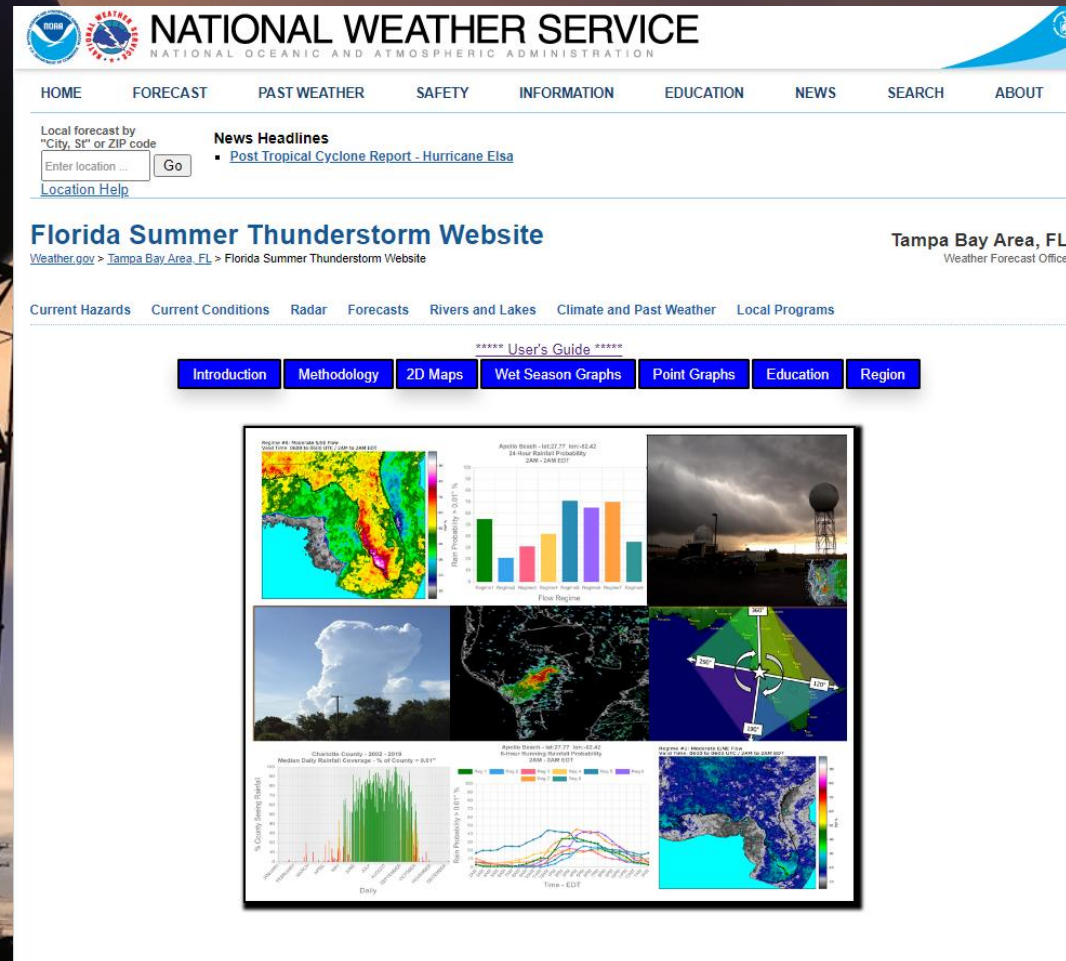


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# Florida Thunderstorm Season Website



The screenshot displays the National Weather Service website for the Tampa Bay Area. At the top, the NWS logo and "NATIONAL WEATHER SERVICE" are visible, along with the text "NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION". A navigation menu includes links for HOME, FORECAST, PAST WEATHER, SAFETY, INFORMATION, EDUCATION, NEWS, SEARCH, and ABOUT. Below the menu, there is a "Local forecast by 'City, St' or ZIP code" search box with a "Go" button and a "Location Help" link. A "News Headlines" section features a link to a "Post Tropical Cyclone Report - Hurricane Elsa". The main heading is "Florida Summer Thunderstorm Website" for the "Tampa Bay Area, FL" Weather Forecast Office. A secondary navigation bar includes "Current Hazards", "Current Conditions", "Radar", "Forecasts", "Rivers and Lakes", "Climate and Past Weather", and "Local Programs". A "User's Guide" section contains buttons for "Introduction", "Methodology", "2D Maps", "Wet Season Graphs", "Point Graphs", "Education", and "Region". The central content area is a grid of weather-related graphics: a radar map of Florida, a bar chart of "Rain Probability - 500T %", a photograph of a storm, a radar image of a storm system, a wind direction diagram, a bar chart of "Median Daily Rainfall Coverage - % of County = 0.01", a line graph of "Rain Probability - 100T %", and another radar map.

<https://www.weather.gov/tbw/ThunderstormClimatology>



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