



NOAA Updated 2018 Hurricane Season Outlook

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Hurricane Research Division/ NOAA/ OAR/ AOML/ HRD

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Web Links

Atlantic Hurricane Outlook

Outlook press release

<http://www.noaa.gov/media-release/noaa-forecasters-lower-atlantic-hurricane-season-prediction>

Outlook technical write-up and analyses

www.cpc.ncep.noaa.gov/products/hurricane

El Niño/ La Niña

Weekly update of tropical Pacific conditions:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

Tutorial (Technical):

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensocycle/enso_cycle.shtml

Monthly Discussion/ Forecast

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/



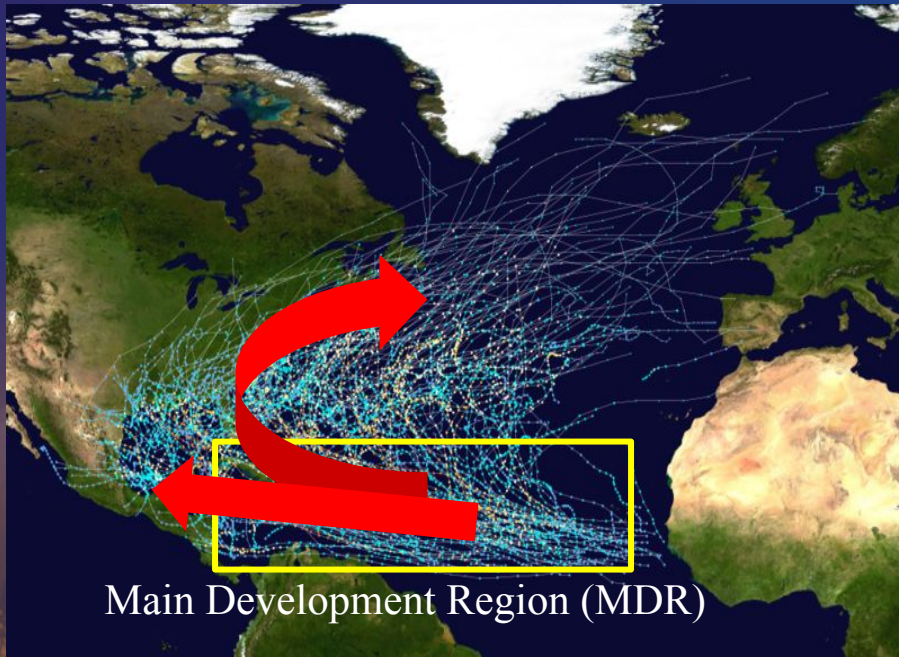
Outline

1. Historical Atlantic storm tracks and counts
2. Updated 2018 Atlantic hurricane season outlook
3. Factors behind the 2018 hurricane outlook
4. Summary



Historical Atlantic Storm Tracks

Atlantic Basin Storm Tracks 1980-2005



Main Development Region (MDR)

Figure Courtesy of Wikipedia

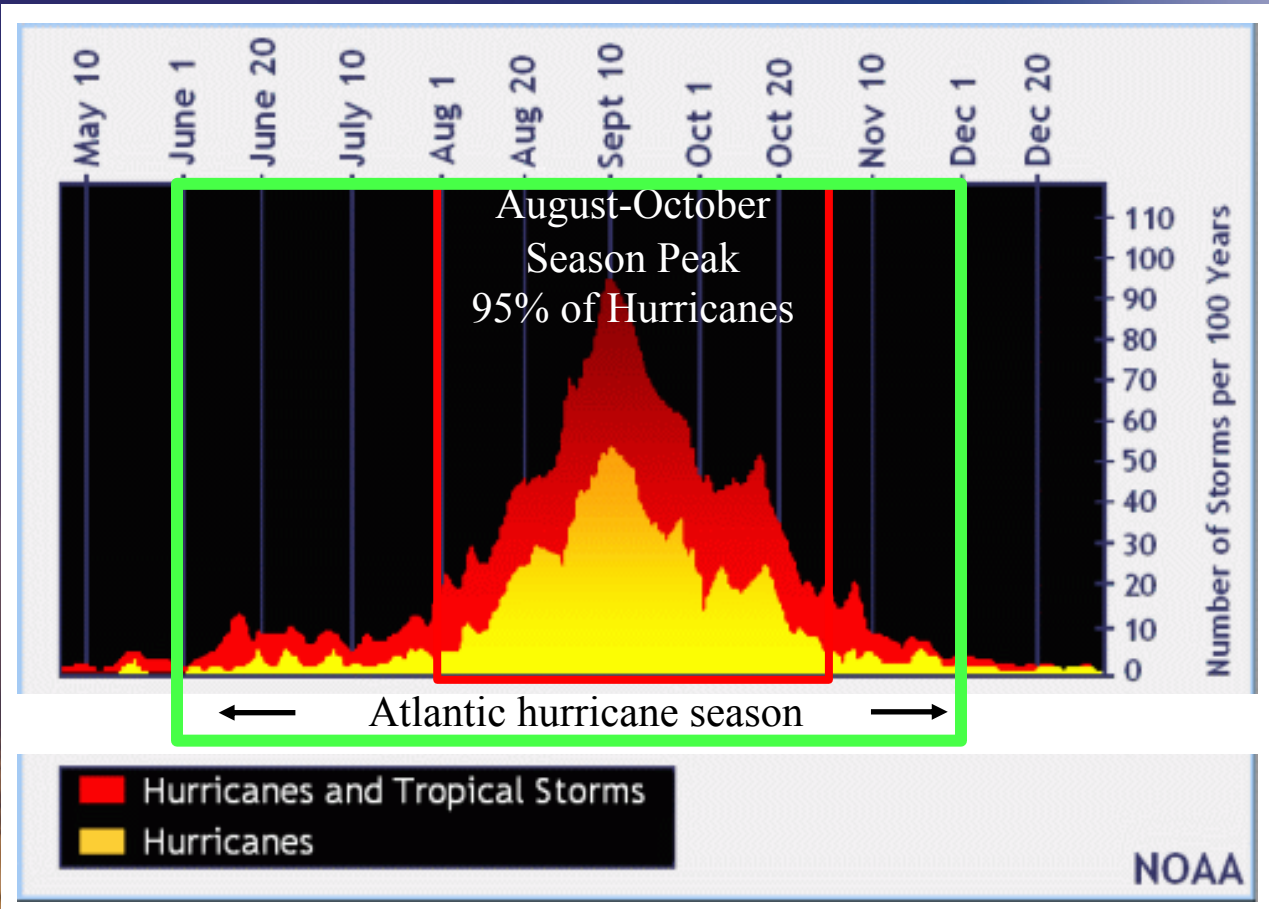
The activity in the Main Development Region (MDR) determines the strength of the hurricane season.

NOAA's seasonal outlooks are based on predicting conditions within the MDR.

During above-normal seasons, storms typically have longer westward storm tracks, which means an increased threat of landfall.



Historical Atlantic Storm Counts



Average Season:
12 Named Storms
6 Hurricanes
2-3 Major Hurricanes

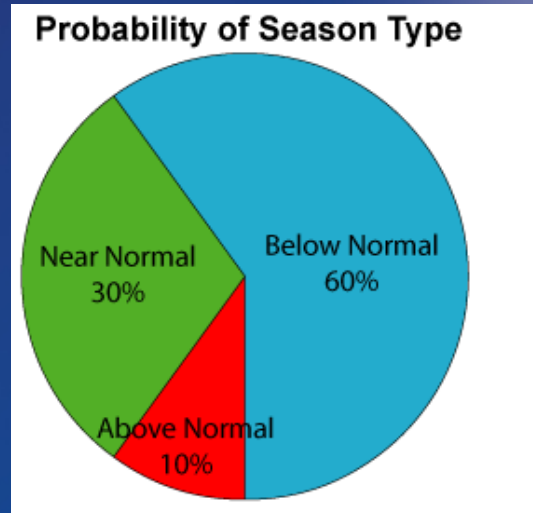
NOAA updates its Atlantic hurricane season outlook in early August, to coincide with peak months (August-October) of the hurricane season.



NOAA's Updated 2018 Atlantic Hurricane Season Outlook

NOAA forecasters lower Atlantic hurricane season prediction

Expect a below-normal or near-normal Atlantic hurricane season



Expect much less activity than last year

Outlook is for the overall seasonal activity. It is not a landfall forecast.

| Activity | August 2018 Outlook | May 2018 Outlook | Last Year Observed |
|------------------|---------------------|------------------|--------------------|
| Named Storms | 9-13 | 10-16 | 17 |
| Hurricanes | 4-7 | 5-9 | 10 |
| Major Hurricanes | 0-2 | 1-4 | 6 |



Storm Names

2018 Atlantic Tropical Cyclone Names*

| | | |
|--------------------|---------|---------|
| Alberto | Helene | Oscar |
| Beryl | Isaac | Patty |
| Chris | Joyce | Rafael |
| Debby | Kirk | Sara |
| Ernesto | Leslie | Tony |
| Florence | Michael | Valerie |
| Gordon | Nadine | William |

*Names provided by the World Meteorological Organization

Be prepared: Visit hurricanes.gov and follow @NWS and @NHC_Atlantic on Twitter. August 9, 2018

9-13 Named Storms Predicted (Isaac through Michael)

Already had 5 storms to date.

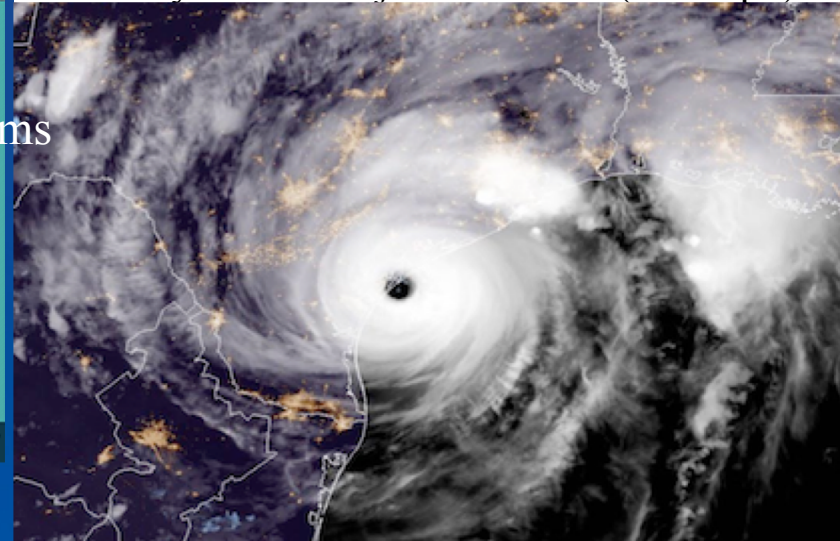
2017 Atlantic Tropical Cyclone Names*

| | | |
|---------------------|-------------------|----------|
| Arlene | Harvey | Ophelia |
| Bret | Irma | Philippe |
| Cindy | Jose | Rina |
| Don | Katia | Sean |
| Emily | Lee | Tammy |
| Franklin | Maria | Vince |
| Gert | Nate | Whitney |

*Names provided by the World Meteorological Organization

Be prepared: Visit hurricanes.gov and follow @NWS and @NHC_Atlantic on Twitter. August 9, 2017

Last Year: August 26th, 2017
Harvey: Cat-4 Major Hurricane (130 mph)





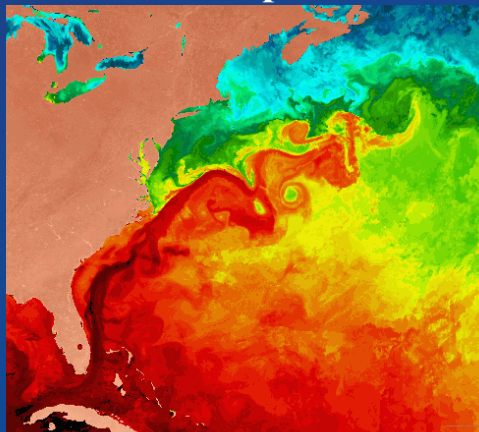
Factors Behind the 2018 Hurricane Outlook

Hurricanes are ultimately a weather phenomena. **However**, the regional conditions within the MDR (which largely control the number, strength, and duration of hurricanes) often last for months or seasons at a time, and have strong climate links.

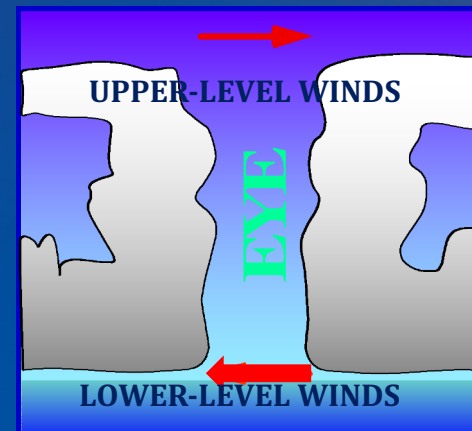
So, by predicting the hurricane-controlling conditions, we can often predict the strength of the hurricane season.

Some Conditions That Control Hurricanes

Atlantic and Pacific Ocean Temperatures

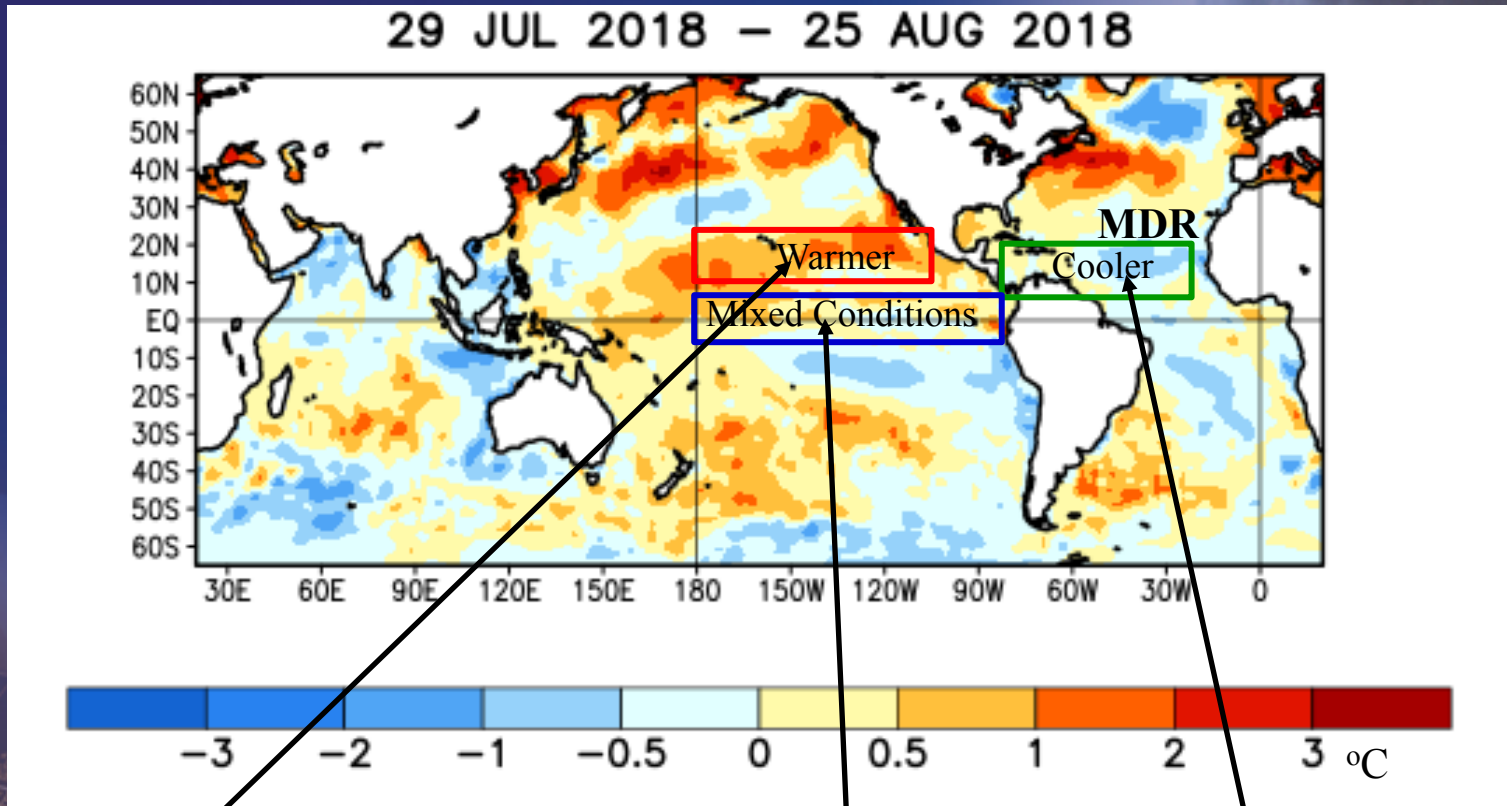


Wind Shear





Recent Ocean Surface Temperature Anomalies (°C)



Warmer central and eastern Pacific favors more, stronger, and longer-lived hurricanes in those areas.

- Currently no El Niño or La Niña.
- El Niño likely to develop and suppress Atlantic hurricane season.

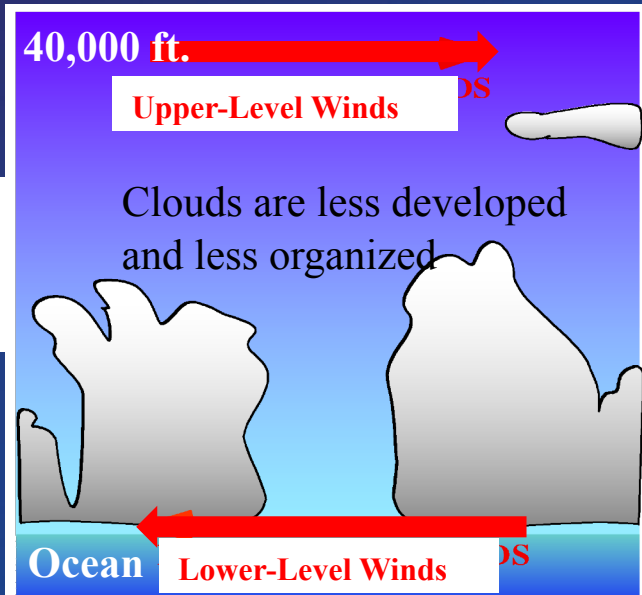
Cooler in MDR: suppresses hurricane activity



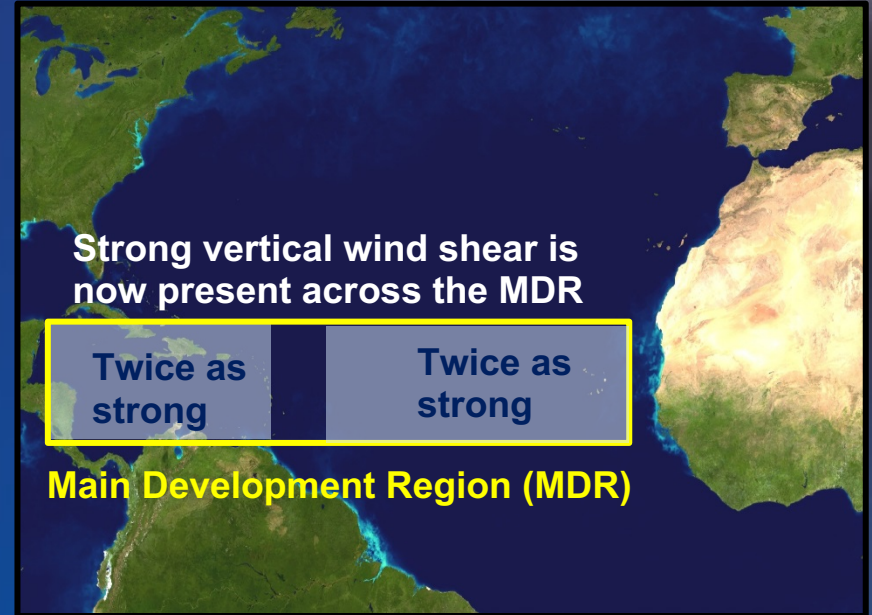
Stronger Vertical Wind Shear is Predicted

Vertical wind shear refers to the change in wind speed and direction going up through the atmosphere.

Strong wind shear (large change in winds) prevents/ weakens/ destroys storms



Look sideways through storm clouds



Lower clouds and circulation

Upper clouds

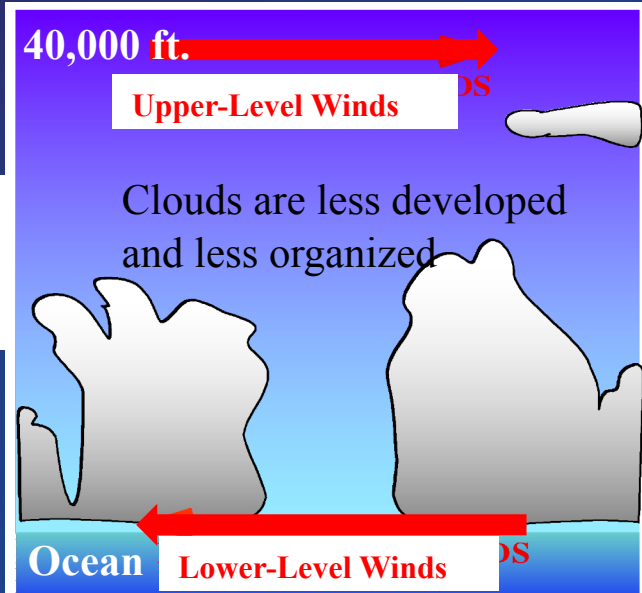
Look down on storm clouds



Wind Shear Now Compared to Last Year

This Year

Strong shear prevents/
weakens/ destroys storms



Strongly Sheared Storm

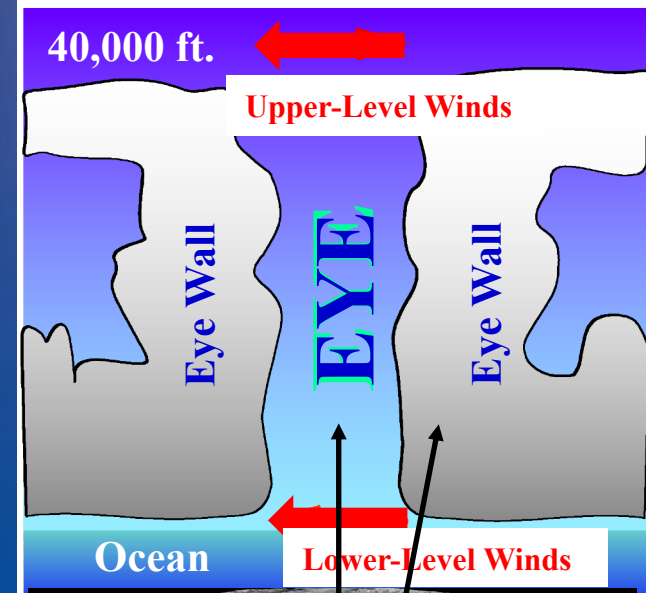


Lower clouds
and
circulation

Upper clouds

Last Year

Weak shear (little change in
wind) favored many strong,
long-lived hurricanes.



Strong Hurricane



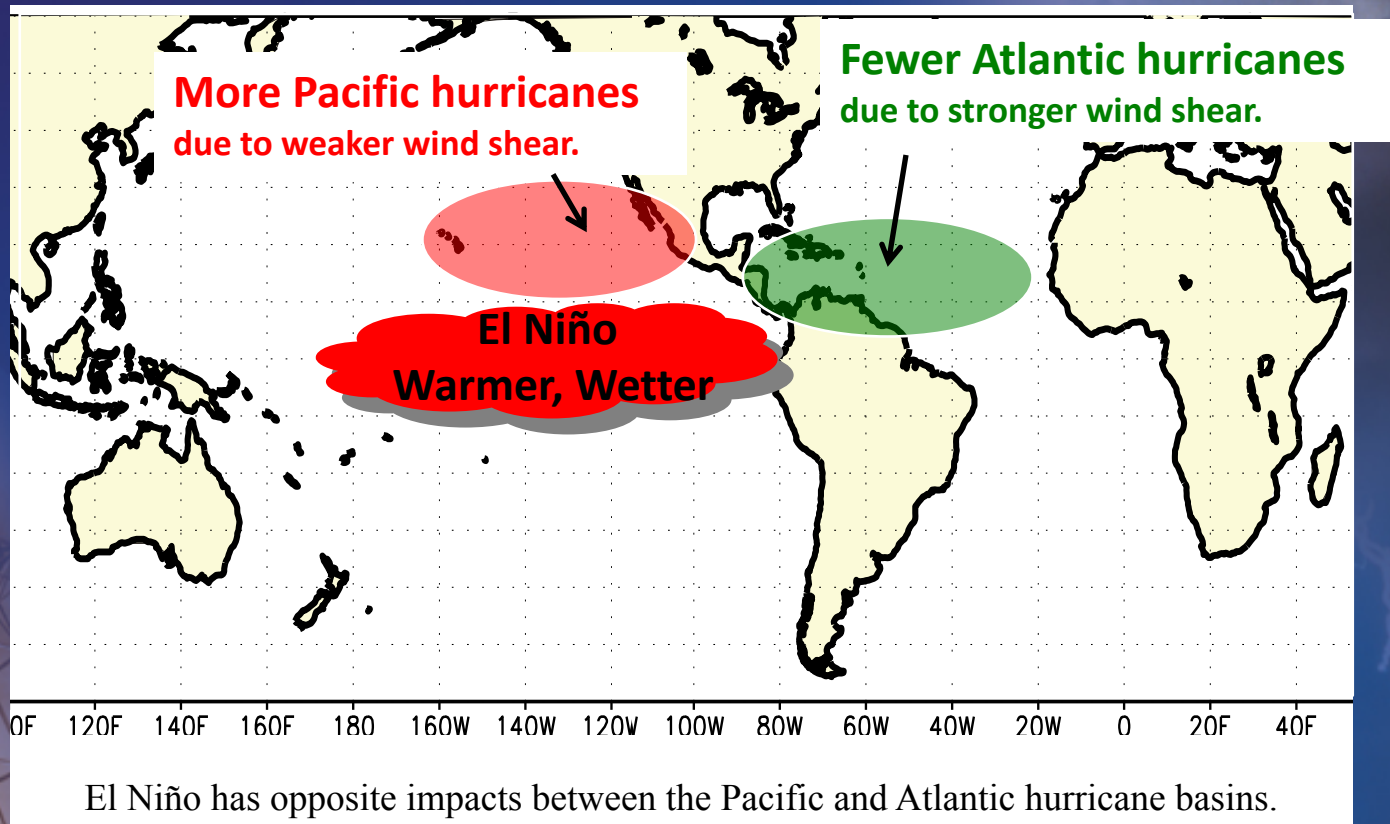
Look sideways
through storm
clouds

Look down on
storm clouds



El Niño Impacts on Hurricane Activity

El Niño is likely to develop (65%-70% chance) and suppress the latter part of the Atlantic hurricane season.





2018 Atlantic Hurricane Season Expected Conditions During August-October

1. Cooler ocean in Main Development Region
2. Possible El Niño to maintain strong wind shear
3. Unfavorable wind patterns continue

These conditions suppress Atlantic hurricane activity.

Cooler ocean (*Blue area*)

Stronger Wind Shear

Stronger Trade Winds (*Blue arrow*)

Cooler and drier air, increased atmospheric stability,
anomalous sinking motion.

Main Development Region (MDR)



Summary

1. Expect less active season than predicted in May: Below-normal (60% chance), near-normal (30% chance), above-normal (10% chance).
2. Reasons to expect less activity:
 - Cooler ocean temperatures in Main Development Region more likely to persist
 - Higher likelihood of El Niño (51%-70%) compared to 38%-45% in May
 - Current and predicted atmospheric conditions suppress hurricane activity
 - NOAA's prediction models and other international models all predict less activity.

Be Prepared: The hurricane season still has a long way to go.

To date, there have been five named storms: 3 tropical storms and 2 hurricanes.

For remainder of season, expect additional 4-8 named storms, 2-5 hurricanes, and 0-2 major hurricanes.