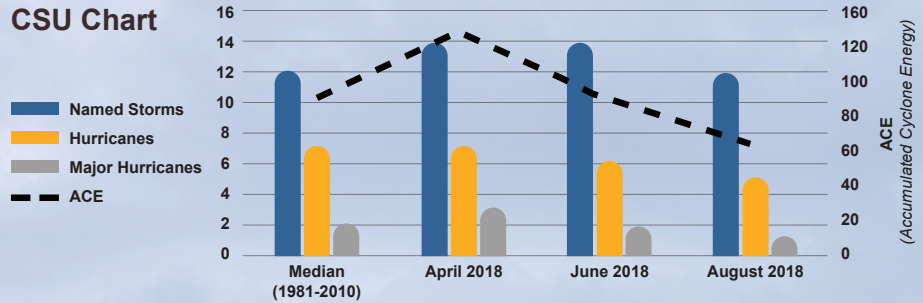


# North Atlantic Hurricane Season Update

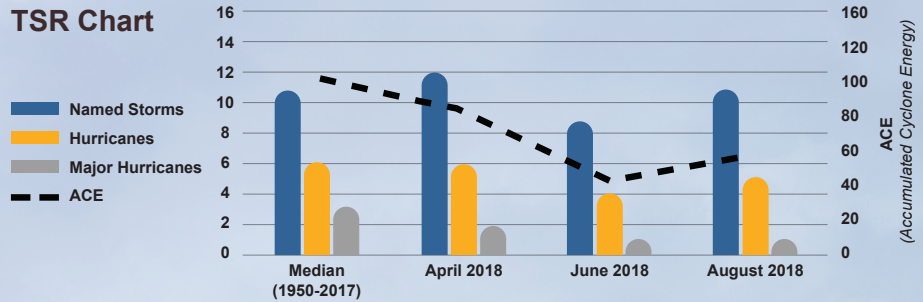
Colorado State University (CSU) and Tropical Storm Risk (TSR) are predicting the 2018 season to be a **below normal season due to unfavorable conditions** for cyclogenesis in the Atlantic.

- Potentially a **weak El Niño** during the peak of the season from August to October
- Higher than normal sea level pressure anomalies **causing increased vertical wind shear** in the North Atlantic and Caribbean Sea
- **Unusually cool sea waters** expected to persist

**CSU Chart**



**TSR Chart**



## Main factors influencing hurricane activity in Atlantic Basin

FAVORABLE	UNFAVORABLE
La Niña – ENSO (-) phase	El Niño – ENSO (+) phase
Weaker vertical wind shear	Stronger vertical wind shear
Warm SST	Cool SST

SST: Sea Surface Temperature

## What happened between April and August 2018

- Transition of ENSO phase – weak La Niña to neutral phase and potentially weak El Niño
- Stronger vertical wind shear across the Atlantic Basin and the Caribbean Sea
- The SSTs across the tropical Atlantic shifted from above normal to weaker than normal (cooler Atlantic that remains during the season)
- Two volcanic eruptions: Kilauea (Hawaii) in May and Volcán de Fuego (Guatemala) in June

If the effect of El Niño is removed, could the cooling of Atlantic SST during this season be, at least in part, a result of the two volcanic eruptions in May and June?

Volcanic eruptions eject ash and aerosol particles into the atmosphere. The particles ejected shade incoming solar radiation, **causing temporary global cooling**<sup>1</sup>. The cooling effect can last for months to years depending on the scale of the eruption.

- Kilauea, Hawaii (2018) – ejected particles up to 20,000 ft.
- Volcán de Fuego, Guatemala (2018) – ejected particles up to 50,000 ft.

## CONTACT

### Maryam Haji

Senior Research Analyst,  
AVP, Global Catastrophe  
Risk Analytics  
mhaji@transre.com



<sup>1</sup> Sullivan, C. (2016), "EOS; Earth & Space Science News" & Even, A.T. (2012), "Journal of Geophysical Research"

Not every volcanic eruption results in a global impact. A powerful eruption which produces sufficient aerosols and injected very high into the stratosphere could cause global and long-term effects. Minor eruptions may have more localized and shorter-term effects.