

Don't believe a word they say!!!!!!

The Associated Press (AP) posted a short video of their long-time climate reporter, Seth Borenstein, claiming that climate change has increased the intensity of hurricanes, caused longer droughts, and increased the intensity and frequency of heavy rainfall.

<https://x.com/AP/status/2061945990056128634>

That sounds pretty scary, but these claims are mostly nonsense.

Here's a breakdown.

STRONGER HURRICANES?

There is very little evidence to support the claim that tropical cyclones (TCs) are becoming measurably stronger. Klotzbach et al. (2022) examined data from 1990–2021 (homogenous satellite monitoring) and found decreases in both global hurricane-strength TC counts and accumulated cyclone energy (ACE) over that period. Also, major hurricane-strength TCs have not increased in frequency since 1990. If global warming were causing an increase in intensity, there'd be more major hurricanes (MHs) and higher ACE. These trends have continued into 2025 (top left charts).

<https://agupubs.onlinelibrary.wiley.com/.../2021GL095774>

<https://tropical.atmos.colostate.edu/Realtime/index.php...>

The IPCC claims, however, that a “greater proportion” of TCs are now reaching MH status.

https://ipcc.ch/.../dow.../report/IPCC_AR6_WGI_Chapter11.pdf

(p. 1519, 1586)

This is very deceptive framing, however, because the increase in the ratio of MHs to total hurricanes only exists because the [more common] weaker hurricanes have decreased in frequency while comparatively rarer major hurricanes have remained fairly constant (e.g., Jewson & Lewis, 2020)

<https://mdpi.com/2673-1924/1/4/21>

What about rapid intensification (RI)? Well, the global number of RI events (defined as a ≥ 30 -kt OR 35 mph increase in the maximum sustained wind speed in ≤ 24 hours) have been fairly constant since 1990 as well, according to the Supporting Information document in Klotzbach et al. (2022). These trends have continued since the study was published (top right bar chart).

Increases in Atlantic TC activity (especially post-1995) are mainly due to multidecadal variability. NOAA GFDL's Dr. Thom Knutson has a very good webpage detailing that.

<https://gfdl.noaa.gov/global-warming-and-hurricanes/>

LONGER DROUGHTS?

Changes in drought frequency and intensity over the last several decades are nuanced.

Here's what IPCC AR6 WG1 says on detection,

“There is **low confidence** that human influence has affected trends in **meteorological droughts** in most regions... There is **medium confidence** that... climate change has contributed to **increasing trends** in the probability or intensity of recent **agricultural and ecological droughts**... Human-induced climate change has contributed to global-scale change in low flow, but **human water management and land-use changes are also important drivers.**”

https://ipcc.ch/.../dow.../report/IPCC_AR6_WGI_Chapter11.pdf

(p. 1579)

A more recent analysis, Vicente-Serrano et al. (2022), concluded similarly, saying,

“**A global increase in the severity of meteorological drought is not supported by the analysis of precipitation deficits, as only a few regions of the world show an increase in the severity of meteorological droughts.**”

<https://royalsocietypublishing.org/.../10.../rsta.2021.0285>

Instrumental data from the University of East Anglia's (UEA) Climatic Research Unit (CRU) shows that these conclusions hold through at least 2024 (see bottom left area chart).

<https://crudata.uea.ac.uk/cru/data/drought/>

Additionally, changes in hydrological droughts were found not to be due to climate change, but instead were related to other man-made influences such as land use and poor water resource management (Vicente-Serrano et al., 2022),

“**Increases in the frequency and severity of hydrological droughts can be traced in part to human activities such as land use change and agricultural intensification (e.g., the Mediterranean area, Northeast Brazil).**”

HEAVIER RAINFALL?

The theoretical foundation pushed by alarmists is the Clausius-Clapeyron (CC) relation, which essentially states that about 7% more water can evaporate into unsaturated air (relative humidity <100%) for every 1°C increase in air temperature.

This much is true. But this nugget of truth is blindly extrapolated to mean uniformly heavier downpours. The problem, though, is that CC tells us nothing about rainfall rate, much less how much rain falls out of a given cloud. It also does not work very well over land areas where moisture sources are finite and there are topographic influences that can act to enhance or suppress rainfall (e.g., Adam, 2023).

<https://www.pnas.org/doi/10.1073/pnas.2304077120>

A major study by Simpson et al. published in PNAS in 2024 found that in many arid and semi-arid regions (which cover vast areas of the globe), near-surface water vapor has not increased in recent decades (it has even declined in some places) contrary to nearly all climate model simulations in CMIP6 assuming near-CC scaling.

<https://www.pnas.org/doi/10.1073/pnas.2302480120>

In the U.S., apparent increases in heavy rainfall are heavily contaminated by non-climatic factors. Dr. David Legates has documented how shifts in meteorological instrumentation have created artificial jumps in extreme precipitation records.

Between 1992 and 1995, NOAA's National Weather Service (NWS) began a modernization program, switching from hourly precipitation measurements taken manually from rain gauges to using Automated Surface Observing Systems (ASOS), which sought to provide near-real-time observations automatically without manual labor. They adopted “tipping-bucket” rain gauges which measure rainfall by collecting water in a small bucket that tips and empties once a fixed amount of precipitation has accumulated.

<https://www.cocorahs.org/Content.aspx...>

While convenient for automation, “tipping-bucket” gauges are known to introduce systematic biases, particularly during periods of intense rainfall.

They are known to lose some rainfall during intense downpours because water continues falling while the bucket is in the process of tipping and resetting.

To compensate, the NWS usually applies increasingly large adjustments as rainfall intensity rises. However, if these correction factors do not accurately represent the behavior of the gauge

during extreme events, they may inadvertently exaggerate the magnitude of the heaviest precipitation totals.

2 Newer ASOS gauges also use Alter windshields, which reduce wind-induced undercatch by shielding the gauge opening from airflow. Because wind tends to deflect raindrops away from precipitation gauges, the addition of windshields increases collection efficiency and generally results in higher recorded precipitation amounts than older unshielded manual gauges.

<https://rmets.onlinelibrary.wiley.com/doi/10.1002/wea.7736>

If you examine the number of days with daily rainfall exceeding the 99th percentile (top 1% heaviest events) per year (averaged per station), there is a spurious jump in the early 1990s that coincides with changes in instrumentation to more efficient rain gauges (bottom right graph). If this were purely a climatic artifact, the increase would be steadily upward, not sudden.

It is very likely that this trend exists elsewhere too as automated instrumentation has taken over, although daily data is spatially limited, especially in Africa and much of South America. Seth needs to do more homework. This wasn't a very good, much less accurate presentation.