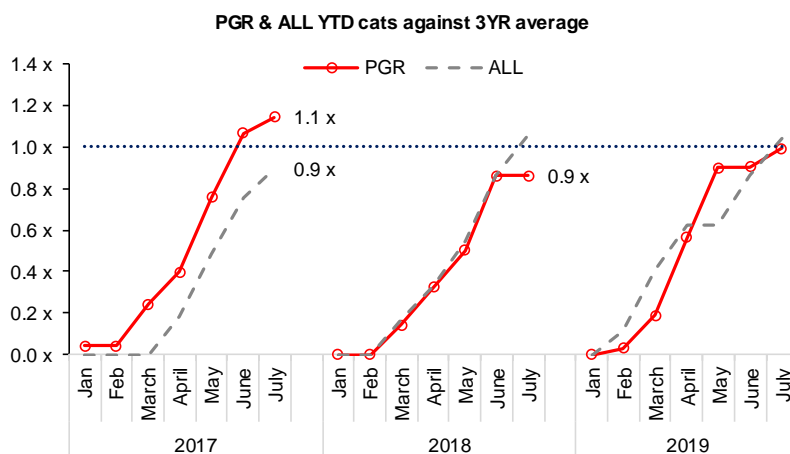*August 30, 2019*

2019 CATASTROPHES: ESTABLISHING THE BASELINE PRE-DORIAN

So far 2019 looks like a relatively "normal" year for US catastrophes based on weather data and disclosed cat estimates.

PGR & ALL YTD cats against 3YR average

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Index	QTD	YTD
Large Cap	1.6%	23.1%
Regional	(0.4)%	11.9%
Specialty	4.7%	24.9%
Personal	(5.9)%	15.0%
Bermuda	2.6%	28.7%
Florida	(12.7)%	(27.5)%
IPC Select	(1.9)%	8.4%
S&P 500	(0.6)%	16.7%
S&P Fin.	(3.3)%	12.1%

Source: S&P Global, Inside P&C

Hurricane Dorian is expected to gate-crash Labor Day as a Category 4 hurricane. Yet taking a step back from the recent developments shows that Q3:19 and YTD weather patterns are pretty average thus far.

Swiss Re's preliminary H1:19 global insured loss estimate of $19bn is down from last year's H1:18 $26bn result. The figures continues a downtrend from a recently estimated high of $31bn for H1:16. Details below.

In line with Swiss Re's global estimates and general weather statistics in the US, Progressive's and Allstate's YTD cat losses point to a relatively normal year in the US (both give more frequent disclosures than peers). The firms' respective $283mn and $1,366mn in provided monthly cat updates are aligned with their respective 3YR averages (see chart above).

Meanwhile, quarter to date weather occurrences per the National Weather Service – which drive attritional non-cat weather losses – are 6.9k, around 5% below the long-run average despite an elevated August. And on a year to date basis, weather occurrences of 20.2k are up 20% from 2018 but 8% below the long run average of 22,000.

In short, 2019 looks like a relatively normal year so far, with neither well-above or well-below average consumption of annual catastrophe budgets year to date within the US, and perhaps a little slack for the more internationally facing global reinsurers.

DORIAN IS COMING FOR LABOR DAY, BUT 2019 LOOKING OK SO FAR

> ❖ *Dorian expected to make landfall as early as Monday.*
> ❖ *Below 10YR average H1:19 global cat losses.*
> ❖ *US cat data pre-Dorian points to relatively "normal" year so far*

**Hurricane Dorian is expected to gate-crash Labor Day as a category 4 hurricane.**

The storm which was originally expected to be a category 3 hurricane is expected to hit Florida as early as Monday, and could be the strongest direct hit since Hurricane Andrew in 1992 according to some reports, though there remains much uncertainty.

With that as context, we thought it would be useful to review 2019 to date catastrophe data as a means of establishing a baseline for thinking about year to date catastrophe budgets and the potential impact of any losses after the storm makes landfall.

Recall on August 15th, Swiss Re released its catastrophe loss estimates for the first half of 2019. The main takeaway is that H1:19 insured losses of natural catastrophes of $19bn are 5% lower than H1 2018, and the lowest since H1:15. H1 losses were driven by flooding and thunderstorms.

EXHIBIT: SWISS RE H1 INSURED LOSS ESTIMATES ($BN)

Source: Swiss Re, Inside P&C
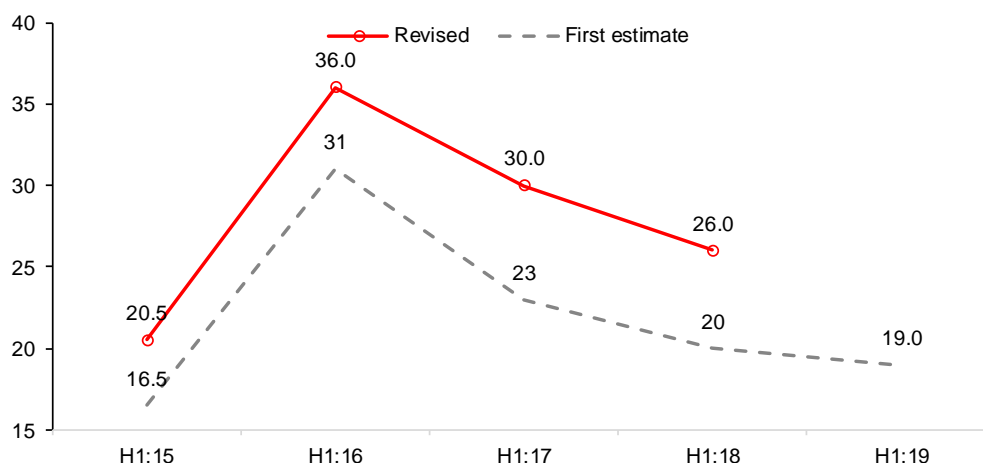
Note, according to **Aon Benfield**, in 2019 to date the US accounted for 66% off incurred catastrophe losses.

To track the impact of weather more closely in the US, we use the National Weather Service granular data on weather events that drive frequency and attritional losses for property.

On a year to date basis, weather events totalled 20,208 - up 20% versus the same period in 2018 but 8% below their long term average and well below the high of 34,694 in 2008.

EXHIBIT: YTD WEATHER EVENTS OVER TIME (JAN-AUGUST)

Source: NWS, Inside P&C
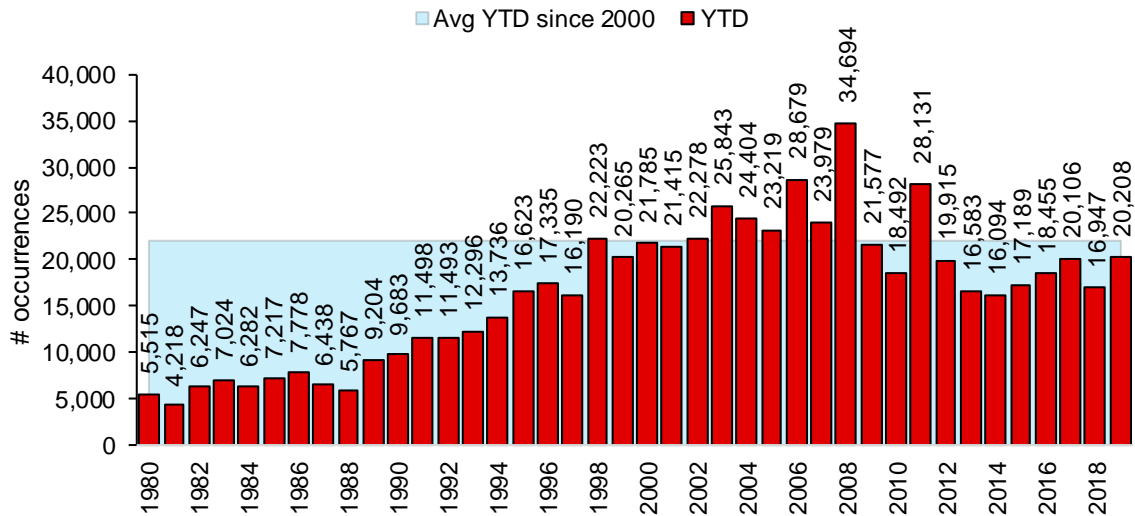
For a more specific look to the level of insured cat impact rather than just weather occurrences, which can sometimes be distorted by the mix of events in urban areas versus sparsely populated rural areas, we look to Progressive and Allstate.

Both issue more frequent catastrophe disclosures than most peers (monthly) and both are large national carriers with a broad geographic spread.

Progressive and Allstate recently released July catastrophe figures of $25.1mn and $235mn respectively. This brought their respective YTD cat figures to $283mn and $1,366mn respectively.

Compared to each firm's respective year three year average YTD cat result, both firms are sitting at their averages.

EXHIBIT: PGR & ALL YTD CATASTROPHES INDEXED TO 3Y AVG

Source: Company reports, Inside P&C
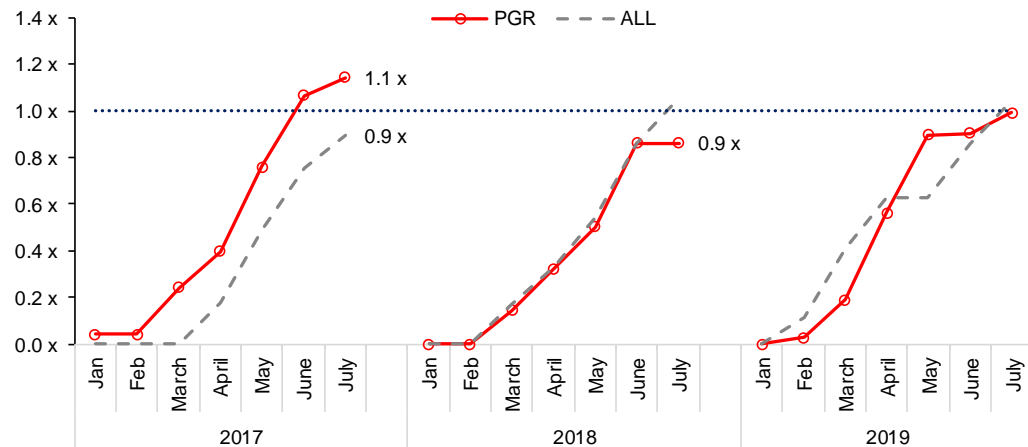
Q3 weather update: A more granular look

Below, we review the more granular quarter to date weather statistics, in line with our typical monthly updates.

With just a few days left in August, QTD total weather occurrences of 6,873 are 5% below a 19YR average. However, this is up 18% YoY, driven by wind events.

EXHIBIT: Q3 WEATHER OCCURENCES

Source: NWS, Inside P&C
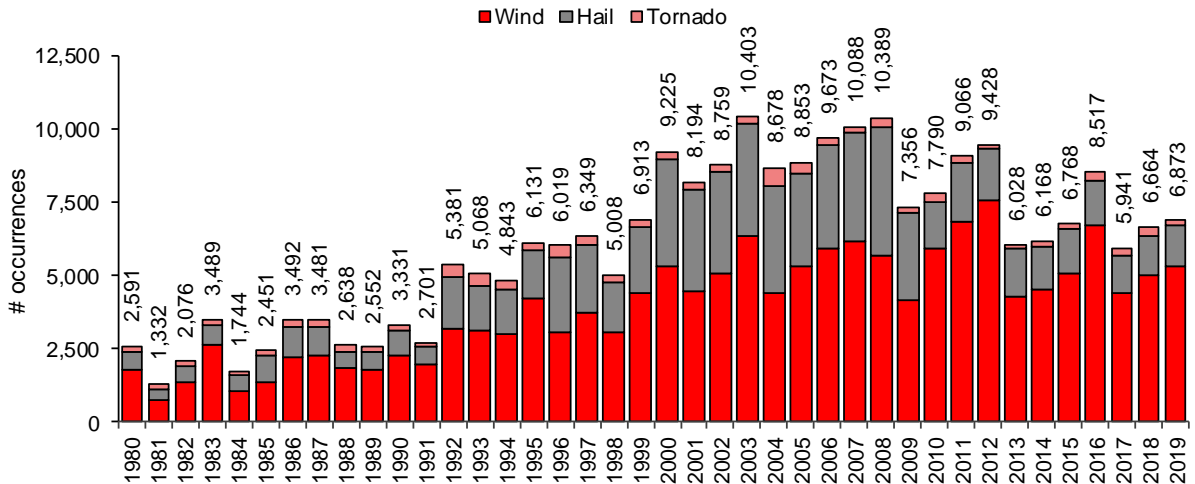
While Q3 still has room to be impacted by September weather occurrences (not least by Dorian or other large named storms), relative to July and August, September is a rather benign month for non-cat weather, historically contributing an average 13% to the Q3 mix. Assuming roughly 1,000 weather occurrences in September would give Q3:19 an 18% YoY growth rate, but this is within one standard deviation of 19% going back to 2000.

EXHIBIT: Q3 WEATHER OCCURRENCE MONTHLY BREAKDOWN

Source: NWS, Inside P&C
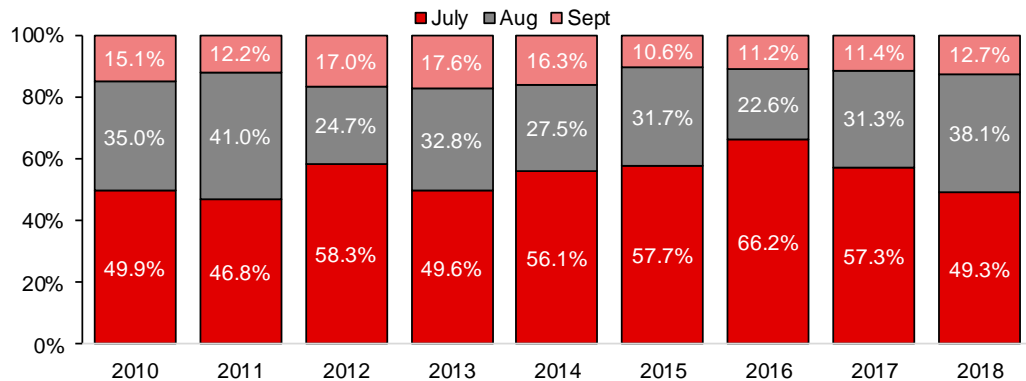
Wind events, specifically in August, are largely responsible for the increase in Q3:19 weather occurrences. During August 2019, the US witnessed 2,523 wind events. This is well above the 19YR average of 1,888, and a 30%/101% increase from 2018/17 respectively. July was well below average serving as an offset to the overall QTD result, which is marginally below average excluding September's results.


EXHIBIT: AUGUST WIND OCCURRENCES

Source: NWS, Inside P&C
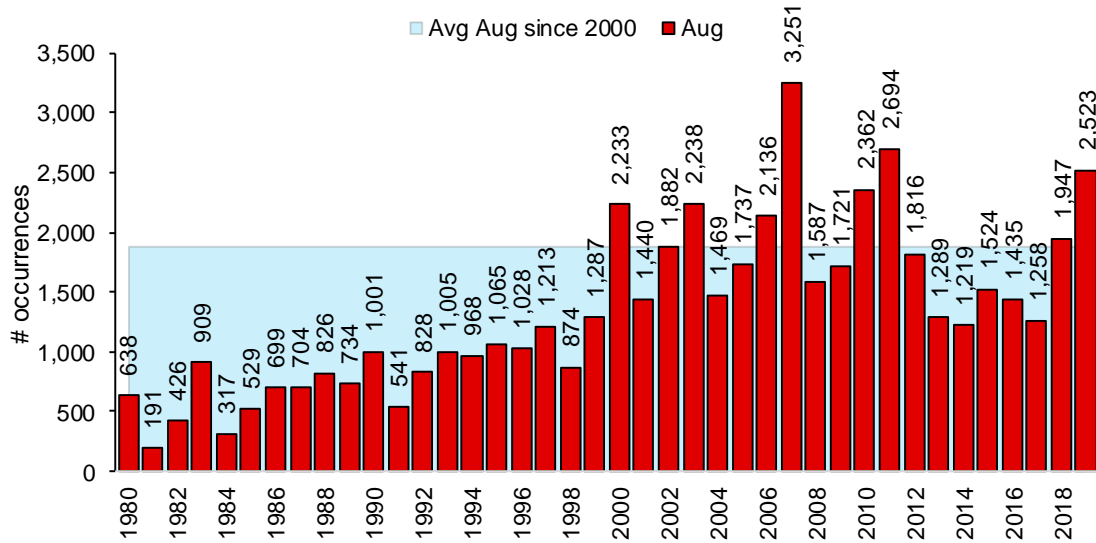
QTD, the **wind events** were evenly split between July and August, with 2,789 events in July, and 2,523 events in August. Looking back to 2010, September usually contributes ~700 wind events to the Q3 mix, which would bring the overall result to ~6,000, a 19% increase on 2017, and 10% above average.

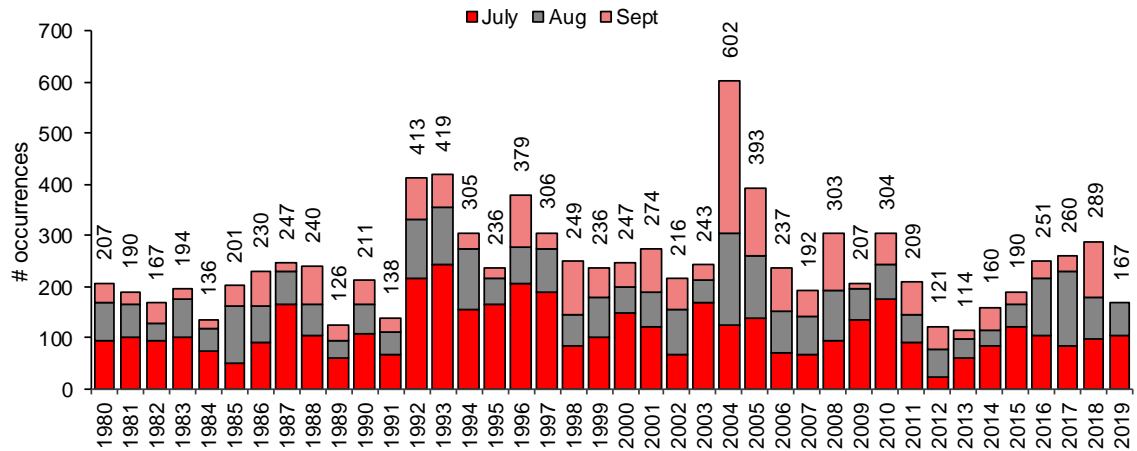**EXHIBIT: Q3 WIND EVENT MONTHLY SPLIT**

Source: NWS, Inside P&C
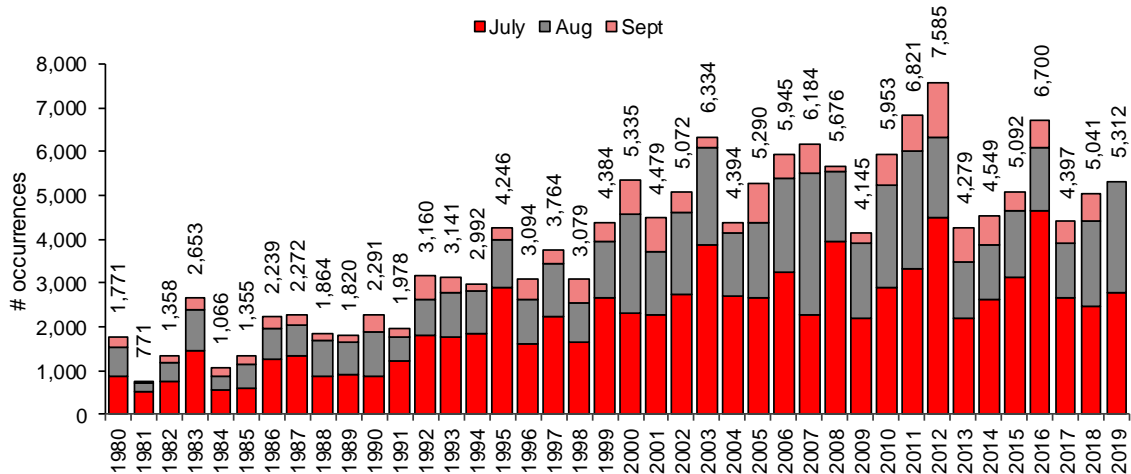
For **tornado** events, July was around average at 103, and August below at 64, bringing the total QTD figure to 167. September will need at least 100 tornadoes, double the average since 2010, to put Q3 tornadoes meaningfully above its 19YR average of 250.
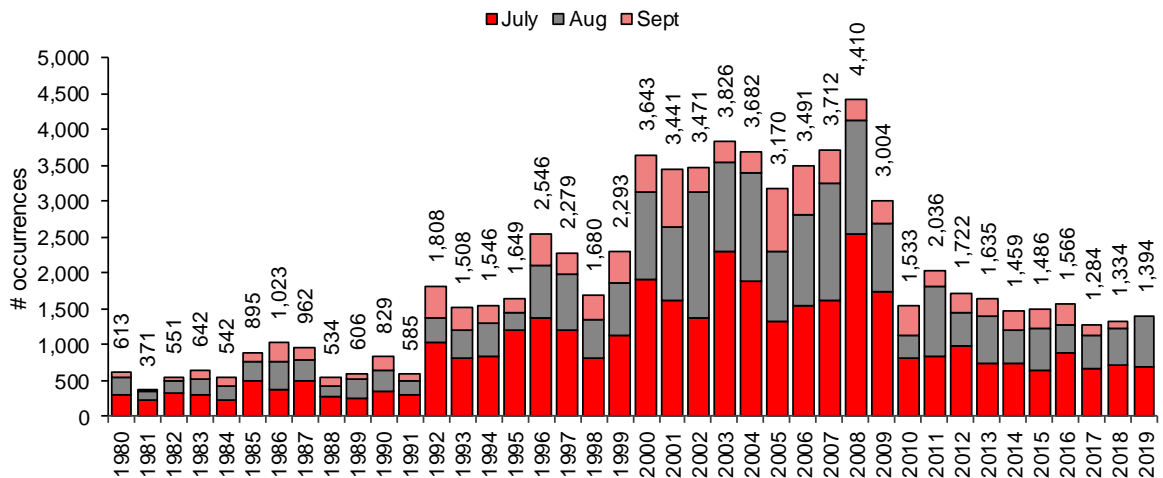
EXHIBIT: TORNADO EVENTS, MONTHLY SPLIT

Source: NWS, Inside P&C

Hail events were below average in July and August at 693 and 701 respectively. QTD there have been 1,394 hail events, and September will need to double the figure to bring it to its 19YR average of roughly 2,600.

EXHIBIT: HAIL EVENTS, MONTHLY SPLIT

Source: NWS, Inside P&C

Inside P&C