2020 is still in the running to be the hottest year on record
Very warm winter in the Northern Hemisphere, and now a hot summer as well

After 3 slightly cooler years, the heat is back
Land & Ocean Temperature Departure from Average Jan–Jul 2020
(with respect to a 1981–2010 base period)

Data Source: NOAAGlobalTemp v5.0.0–20200808

You are here

Degrees Celsius

Please Note: Gray areas represent missing data
Map Projection: Robinson
Land & Ocean Temperature Percentiles Jul 2020
NOAA's National Centers for Environmental Information
Data Source: NOAAGlobalTemp v5.0.0–20200808
Land & Ocean Temperature Departure from Average Jul 2020
(with respect to a 1981–2010 base period)

Data Source: NOAAGlobalTemp v5.0.0–20200808

You are here

Please Note: Gray areas represent missing data
Map Projection: Robinson
Land–Only Percent of Normal Precipitation Jul 2020
(with respect to a 1961–1990 base period)

Data Source: GHCN–M version 4beta

You are here

Percent

National Centers for Environmental Information

Please Note: Gray areas represent missing data
Map Projection: Robinson
Digression #1
Siberia is burning up, both figuratively...

Average daytime land surface high temp for 20-30 June 2020

On 20 June 2020 Verkhoyansk had the warmest temperature ever recorded in the Arctic: 100° F
...and literally

Smoke-detected fires via satellite in Siberia – 6 August 2020
In spring 2020 the Northern Hemisphere has cooled, but the South Pacific and Indian Ocean, as well as the equatorial Atlantic, are rapidly accumulating heat.
In spring 2020 the Northern Hemisphere has cooled, but the South Pacific and Indian Ocean, as well as the equatorial Atlantic, are rapidly accumulating heat.
An area of higher ocean heat content was present northeast of Hawaii in April.
This ocean hot spot is still there in August
The Monument has gone from a mosaic of warm and cool areas to solidly warm
Winter 2019-2020 saw a mix of warm and cool areas in the Monument.
In spring a zone of excess heat lay to the north, possibly linked to this winter’s strong polar vortex pattern.
Now in summer, there are no extreme hot spots, but the entire Monument is now warmer than average.
In the spring, an experimental product indicated that thermal stress was likely into late summer for the Pearl & Hermes – Midway – Kure sector of the Monument (but there was a low likelihood of bleaching elsewhere).
Now in summer, this product indicates a 90-100 percent change of heat stress for reefs throughout the Hawaiian Islands.
There is a 60 percent probability of bleaching warning conditions in the Monument later this summer.
Digression #2

No place to hide...

The western United States is also experiencing record heat

Heat dome over western US on 17 August 2020
Digression #2

No place to hide...

Records fall all over Texas...

...and in the desert Southwest
Digression #2
And the winner is...

DEATH VALLEY, AT 130°F!

Summary statistics for 16 August 2020, courtesy the National Park Service

Hottest temperature recorded in North America in over 100 years
At least it finally cooled down to 95°F by dawn
Looking Forward

An ensemble of 27 climate models predicts ENSO-neutral trending to La Niña conditions through early winter 2020
Conclusions

2020 is currently the second hottest year on record, after one of the warmest winters on record in the Northern Hemisphere, followed by a hot summer in many areas. As a result, the Northern Pacific Ocean is carrying excess heat content.

ENSO-neutral conditions are present, and expected to persist through summer 2020. There is a 60% chance of La Niña development this winter.

There is a 90+% probability of thermal stress to Monument coral reefs this summer, with all areas of the Hawaiian Islands affected. There is a 60% probability that Monument reefs will reach Bleaching Watch status.

Local tropical cyclone events have already occurred in Hawaii this year, despite the presence of an ENSO-neutral pattern trending into La Niña. This is not favorable for Eastern Pacific cyclone formation, whereas high ocean heat content in the Atlantic creates increased risks for a severe season there.

Sea level continues to rise at 3-5 mm per year. Inundation is a long-term problem that will not go away, and may increase over time depending on future melting trends in Greenland and Antarctica.
Questions?