NORTH AMERICAN HEATWAVES NOW AND IN THE FUTURE

BY

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June 27, 2021, compared to 2014-2020 baseline
Defining a Heatwave

• A heat wave is defined (although some geographic variation) as a period of two or more consecutive days where the daily maximum and minimum temperatures exceed the long-term 85th percentile.
The Recent North American Heatwave (Associated Facts And Figures)

- **Globally** – Sixth Warmest May and fifth warmest June in 142 years.
- **North America** - Coldest May since 2011 but hottest June on record (1.2°C warmer than 1991 to 2020 average, 2.3°C above the LTA).
- Some locations recorded June temperature departures of 16°F (9 to 10°C) above the LTA.
- At least four large scale heatwaves occurred across NA from 19 May till July 7, culminating in the extended heatwave from 26 June till July 7.
- New all-time maximum temperature records were set for a number of locations across the northwest on June 27 and 28, with new all-time state temperature records set for Oregon and Washington.
Other Contributing Factors

• The extreme heat wave occurred over parts the country experiencing extreme drought.

• Over 20% of the country is in the worst two categories of drought.
Planetary Waves, Blocking and Heat Domes
The average heat wave season across 50 major cities is now 45 days longer than it was in the 1960s.
Observed trends show global change in heatwave characteristics.
Attribution studies provide further insights

- 132 attribution studies have been undertaken worldwide examining the climate change signal on extreme heatwave events.
- 122 (92%) found that climate change had made such an event more likely or more severe.
- No studies found a heatwave had been made less severe by climate change, while two studies (2%) identified no influence a further eight (6%) were inconclusive.
- For this most recent event one study suggests that climate change made the heatwave at least 150 times more likely.
Future Heatwaves

- Within the next 30-60 years, the number of days U.S. heatwaves could increase by a factor of 1.2 to nearly 2 times in comparison to similar events occurring between 1970-2000.

- When the two characteristics of extreme heat (duration and frequency) were combined, the number of heat wave days per summer could increase by four- to five-fold in many western mountain states and Texas.
Planetary Waves, Blocking and Heat Domes