

Fig. 1. Top: cherry blossom peak bloom date in Kyoto, Japan.¹ Left: March temperature change (°C) in a century. Photo by Makiko of cherry trees in Branch Brook Park, Newark, NJ.

March 2021 Global Temperature Update

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The date of peak cherry blossom bloom has been recorded in Kyoto Japan for 1200 years. The date of peak bloom this year, 26 March, is the earliest in the 1200-year record (top graph). Map above: March temperature in Japan has increased about 3°C (~5°F) in the past century.

March 2021 global temperature (Fig. 2) was +1.16°C relative to 1880-1920, the 8th warmest March since 1880. Monthly temperature continues to fall well below last year's level.

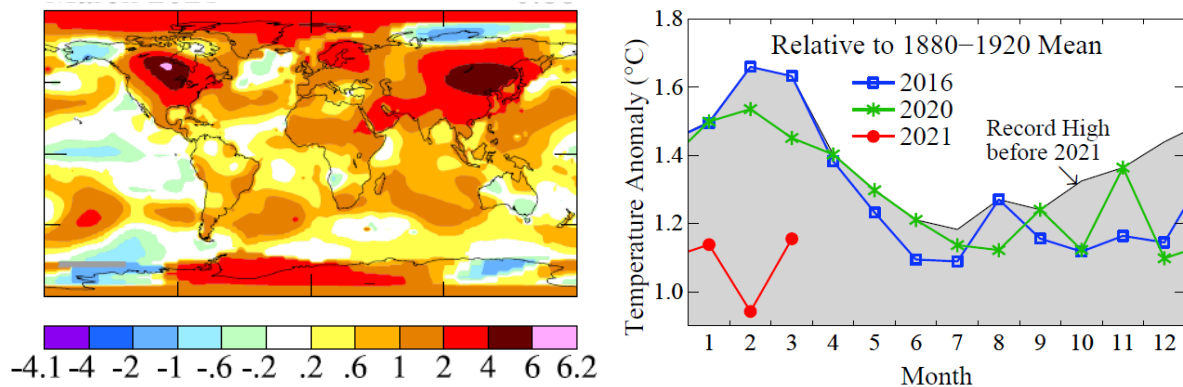


Fig. 2. Map: March 2021 temperature relative to 1951-1980. Line graph: monthly global mean temperature anomalies for 2016, 2020 and 2021 relative to 1880-1920.

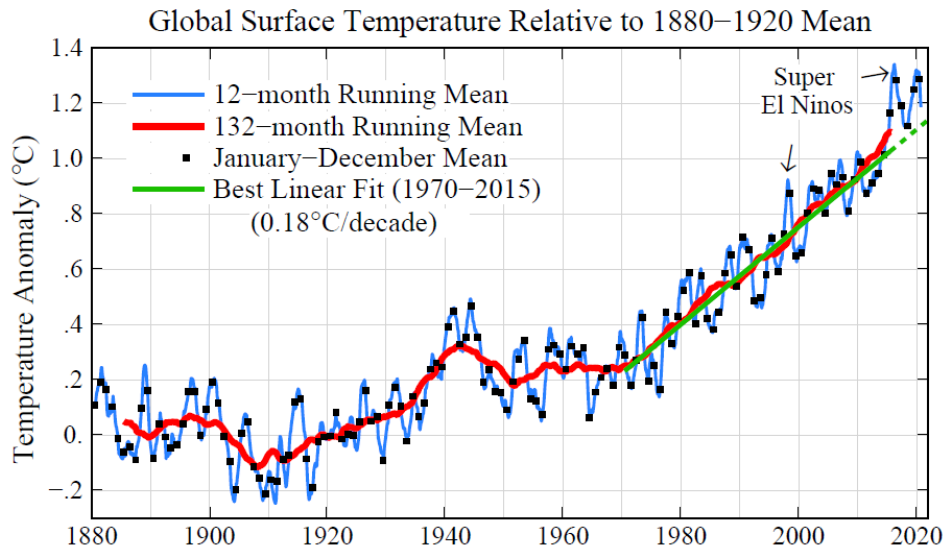


Fig. 3. Global surface temperature relative to 1880-1920 average.

The 12-month running mean global temperature (blue curve in Fig. 3) is still above the linear trend line based on 1970-2015 global temperature, but it will continue to decrease as long as the red curve in Fig. 2 continues to fall below the green curve in Fig. 2.² We need to see to what degree there is a global warming acceleration.

The current NCEP (NOAA’s National Center for Environmental Prediction) forecast has tropical temperatures headed for a double-dip La Nina (Fig. 4), in which case the global temperature may cool off further. ENSO forecasts fluctuate a lot -- it seems that the tropics are inherently unpredictable or the modelers still have some work to do.

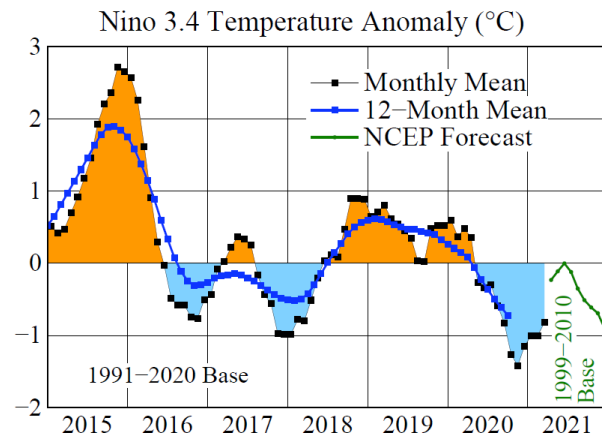


Fig. 4. Nino 3.4 temperature anomaly for past six years and NCEP forecast (green line). Note that the data for the past is 12-month running mean, while the forecast is monthly.

¹ Data source: Aono et al., Osaka Metropolitan University (<http://atmenv.envi.osakafu-u.ac.jp/aono/kyophenotemp4/>)

² As we advance one month, the change to the 12-month running mean is obtained by adding the most recent point on the red curve and deleting the same month from the green curve. So as long as the red curve remains below the green one, the 12-month mean will keep declining.