Global temperature

Global surface temperature in 2015 easily beat the previous record holder, 2014, for the title of warmest year in the modern instrument record. The long-term warming trend of the surface and lower atmosphere continued.

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The State of the Climate report series is the authoritative annual summary of the global climate. Published in the Bulletin of the American Meteorological Society, the report is edited by scientists at NOAA's National Centers for Environmental Information. The 2015 report is based on contributions from more than 450 scientists from 62 countries, drawing on tens of thousands of measurements of Earth's climate.

The report confirmed that 2015 surpassed 2014 as the warmest year since at least the mid-to-late 19th century. The record heat resulted from the combined influence of long-term global warming and one of the strongest El Niño events the globe has experienced since at least 1950. Most indicators of climate change continued to reflect trends consistent with a warming planet. Several markers, such as land and ocean temperatures, sea levels, and greenhouse gases, broke records set just one year prior. Browse the articles below to learn more about our changing planet.

Interactive map of extreme events & anomalies

Climate scientists keep careful records of extreme events around the world to understand the type of climate hazards that different parts of the world are vulnerable to and whether those events are becoming more frequent or intense over time.

From devastating cyclones to crippling drought, this map highlights the events that scientists from around the world decided should go down in the 2015 record books as the year's most significant.

El Niño came, saw, and conquered

A record-smashing hurricane season in the central North Pacific. Water rationing in Puerto Rico. The biggest one-year jump in atmospheric carbon dioxide concentrations on record. Severe drought in Ethiopia. The hottest global surface temperature—by one of the largest margins—on record.

Those are just a few of 2015’s major climate happenings documented in the recently released State of the Climate 2015 report from NOAA and the American Meteorological Society. While the events were scattered across the globe, they all had one thing in common: they were all connected to one of the three strongest El Niños on record.

Father and daughter talk about their connection to climate, the wilderness of the North Cascades, and each other

Glacier scientist Mauri Pelto provides an annual update on the status of mountain glaciers each year for the State of the Climate report. This year, his daughter's climate-inspired watercolors appears on the report's covers. Pelto and his daughter, Jill, talk to NCEI's Deke Arndt about how
Warm oceans, loss of sea ice behind big changes in marine life

Loss of sea ice is changing the behavior of Arctic walruses and causing huge declines in some Antarctic penguins species. Warm water fishes are driving polar species out of the Barents Sea. Report editor Jessica Blunden surveys some the dramatic changes in ocean life documented in the 2015 State of the Climate report.

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