

Commonly Asked Questions: NOAA Global Temperature Dataset Version 5

(NOAAGlobalTemp v5)

About the Update

Why is this dataset being updated? Why is updating datasets good for users?

NOAA periodically updates its datasets to provide the most accurate depiction of environmental conditions. Based on the best available data from a network of global reporting stations, version 5 of NOAAGlobalTemp represents a synthesis of [Global Historical Climatology Network–Monthly](#) dataset Version 4 (GHCNm v4) and [Extended Reconstructed Sea Surface Temperature](#) Version 5 (ERSSTv5).

This updated dataset ensures that researchers, businesses, and industry have the best available information to develop tools, products, services, and assessments for decision making and that scientists can use in their research. The dataset is used by NCEI in the development of the monthly Global Climate Report. Other science-driven organizations in academic and economic sectors also use the dataset for global climate monitoring and applications.

Changes from Version to Version

What improvements does this version introduce?

NOAAGlobalTemp was last updated in 2015. Version 5 is a blended product of the latest ERSST and GHCNm datasets.

- Released in July 2017, ERSSTv5 added more comprehensive ocean surface temperature data collected since 2015 and included new data from Argo floats that had never been used before in the dataset.
- Released in October 2018, GHCNm v4 incorporated data from 19,000 additional reporting sites and capitalized on enhanced methods to analyze the volumes of information available in the NOAA NCEI archive.

ERSST Version 5	GHCNm Version 4	NOAAGlobalTemp Version 5
Released July 2017	Released October 2018	Released June 2019
The update to ERSST added more comprehensive ocean surface temperature data collected since 2015 and included data from Argo floats for the first time.	The update to GHCNm incorporated data from over 19,000 additional land surface air temperature reporting stations.	NOAAGlobalTemp v5 merges ERSST v5 and GHCNm v4 for greater coverage and accuracy.

Operational Uses

How can the operational dataset be accessed?

As of June 2019, NOAAGlobalTemp v5 is available from NCEI at <https://www.ncei.noaa.gov/data/noaa-global-surface-temperature/v5/>. It is available in netCDF format. The DOI for the new version is: <https://doi.org/10.25921/9qth-2p70>.

How will the operational dataset be used by NCEI?

The dataset will be used to produce the Global [State of the Climate](#) report for May 2019 and henceforward for future reports and global monitoring.

Beyond NCEI, who will use it, and what kind of studies does it contribute to?

Atmospheric research scientists and private sector interests constitute the major users of the dataset. Scientists around the world consider global surface temperature a critical component to help understand Earth's climate. Private sector interests use the dataset to assess related monthly factors, such as pending heating and cooling costs, or trends in the same. They use the data for global climate monitoring and assessment, environmental research, and informational products and services for various industries and economic sectors, such as agriculture.

Does the new version change the conclusions regarding global temperature increases?

Conclusions regarding the rate of warming in global land surface temperature are largely unchanged. Over the combined land and ocean domain, NOAAGlobalTemp v5 trends are statistically consistent with the previous version over decadal and longer time scales.

Peer-Review Process/Transparency

What kind of testing and peer-review does the dataset undergo before NCEI releases it for use?

As a matter of course, scientists with NCEI used a series of quality assurance tests to ensure the accuracy and integrity of NOAAGlobalTemp version 5 as compared to the previous version. The final version

underwent scrutiny to validate its results and was released as a Beta version for input from users and the scientific community.

The methodology of the dataset was reviewed within NOAA and by peers in the global studies community. A series of readiness reviews took place before the final public release.

A review journal article about the new version has been accepted in AGU *Eos*.

What do scientists do with user feedback once the dataset is released?

NCEI scientists regularly review user feedback and evaluate its scientific value. Feedback with scientific merit and/or potential to support U.S. economic interests is used in future improvements of this product.