

WeatherNext 3 Dataset Attributions & Acknowledgements

The following data sources were used in training the WeatherNext 3 model and/or are used in operationalizing its real-time forecasts:

Copernicus ERA5 Reanalysis

Copernicus Climate Change Service, Climate Data Store, (2023): ERA5 hourly data from 1959 to present. Copernicus Climate Change Service (C3S) Climate Data Store (CDS). DOI: 10.24381/cds.adbb2d47. (Accessed on 05-05-2026.)

Generated using or contains modified Copernicus Climate Change Service information. Neither the European Commission nor ECMWF is responsible for any use that may be made of the Copernicus information or data it contains.

ECMWF HRES Analysis

ECMWF HRES datasets (available at www.ecmwf.int). Copyright 2023 ECMWF. ECMWF open data is published under CC BY 4.0.

Source: European Centre for Medium-Range Weather Forecasts (ECMWF). Contains modified data from ECMWF. Neither ECMWF nor the European Commission is responsible for any use that may be made of the information or data it contains.

Meteosat (1st, 2nd, and 3rd Generation)

Includes calibrated satellite observations supplied by EUMETSAT under the Creative Commons Attribution 4.0 International (CC BY 4.0) license (<https://data.eumetsat.int/>).

GOES-R Series (16, 17, 18, and 19)

NOAA Geostationary Operational Environmental Satellites (GOES) is accessed on an ongoing basis from <https://console.cloud.google.com/marketplace/product/noaa-public/goes>.

Himawari (8 and 9)

Source: Meteorological Satellite Center of Japan Meteorological Agency (JMA) via NOAA NODD

(<https://console.cloud.google.com/marketplace/product/bigquery-public-data/himawari>).

Modification: Google incorporated the data into a global coverage geostationary satellite mosaic.

MTSAT Series (1R and 2)

MTSAT geostationary satellite data provided by the Japan Meteorological Agency (JMA) and distributed by the NASA Langley Research Center Atmospheric Science Data Center (ASDC) CERES project.

GEO-KOMPSAT-2A

Korea Meteorological Administration (KMA) GK-2A Satellite Data is accessed on an ongoing basis from 2026-07-07 from <https://registry.opendata.aws/noaa-gk2a-pds>.

NOAA GridSat-B1

NOAA Fundamental Climate Data Records (FCDR) first accessed on September 2024 from <https://registry.opendata.aws/noaa-cdr-fundamental>.

NOAA MADIS Surface Mesonet Network

Meteorological Assimilation Data Ingest System (MADIS) data provided by NOAA Oceanic and Atmospheric Research (OAR) / Global Systems Laboratory (GSL) and National Weather Service (NWS).

METAR (Aviation Routine Weather Reports)

Land Surface METAR weather observations provided by National Centers for Environmental Information, NESDIS, NOAA, and U.S. Department of Commerce from <https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.ncei:Metar>.

NOAA Integrated Surface Database (ISD)

Integrated Surface Database (ISD) provided by NOAA National Centers for Environmental Information (NCEI) (Smith et al., 2011).

NOAA ICOADS (International Comprehensive Ocean-Atmosphere Data Set)

Research Data Archive/Computational and Information Systems Laboratory/National Center for Atmospheric Research/University Corporation for Atmospheric Research, Physical Sciences Laboratory/Earth System Research Laboratory/OAR/NOAA/U.S. Department of Commerce, Cooperative Institute for Research in Environmental Sciences/University of Colorado, National Oceanography Centre/University of Southampton, Met Office/Ministry of Defence/United Kingdom, Deutscher Wetterdienst (German Meteorological Service)/Germany, Department of Atmospheric Science/University of Washington, Center for Ocean-Atmospheric Prediction Studies/Florida State University, and National Centers for Environmental Information/NESDIS/NOAA/U.S. Department of Commerce. 2016, updated monthly. International Comprehensive Ocean-Atmosphere Data Set (ICOADS) Release 3, Individual Observations. NSF National Center for Atmospheric Research. <https://doi.org/10.5065/D6ZS2TR3>. First accessed April 4, 2025.

IBTrACS (International Best Track Archive for Climate Stewardship)

NOAA's International Best Track Archive for Climate Stewardship (IBTrACS) data, first accessed on 1 Dec 2022.

TCVitals & Live Tropical Cyclone Feeds

Cyclone tracks (TCVitals) provided by the Joint Typhoon Warning Center and NOAA National Hurricane Centre, retrieved via NOAA and UCAR.

NASA IMERG (Integrated Multi-satellitE Retrievals for GPM)

IMERG precipitation data provided by the NASA Goddard Space Flight Center and the Global Precipitation Measurement (GPM) mission, distributed via NASA GES DISC (Huffman et al., 2019/2020).

NASA GPM CORRA 2B

G. Huffman, D. Bolvin, D. Braithwaite, K. Hsu, R. Joyce, P. Xie, 2014: Integrated Multi-satellitE Retrievals for GPM (IMERG), version 4.4. NASA's Precipitation Processing Center, accessed September 2024, <ftp://arthurhou.pps.eosdis.nasa.gov/gpmdata/>.

NOAA AMSU-A Brightness Temperature Climate Data Record (CDR)

Zou, Cheng-Zhi; Wang, Wenhui; and NOAA CDR Program (2013): NOAA Fundamental Climate Data Record (FCDR) of AMSU-A Level 1c Brightness Temperature, Version 1.0. NOAA National Climatic Data Center. doi:10.7289/V5X63JT2 [Accessed September 2024].

EUMETSAT EARS-ATMS (Advanced Technology Microwave Sounder)

EUMETSAT (2012): EARS-ATMS - Suomi-NPP and JPSS. EUMETSAT Data Store. Collection ID: EO:EUM:DAT:MULT:EARS-ATMS.

EUMETSAT Metop MHS (Microwave Humidity Sounder)

EUMETSAT (2020): MHS Microwave Humidity Sounder Climate Data Record Release 1 - Metop and NOAA, Version 1.0. EUMETSAT. doi:10.15770/EUM_SEC_CLM_0045.