

Met Office data products and services

The Met Office is the UK's National Meteorological Service, providing 24x7 world-renowned scientific excellence in weather, climate and environmental forecasts and severe weather warnings for the protection of life and property. Our purpose as a world leading science and technical experts is to provide critical weather services that help the public, businesses and policymakers make better decisions to stay safe and thrive.

Value of Met Office Data

Our Numerical Weather Prediction system is widely acknowledged as the most accurate, short-range, global model data produced by a National Meteorological Service. Our data can help to optimise operations, improve resilience to extreme weather and climate change and help people make decisions to stay safe and thrive.

Our products and services can support you in reducing weather related risks and maximising efficiency through accurate identification of weather windows.

Our extensive portfolio covers the UK, Europe, and the rest of the globe, providing accurate and reliable weather and climate data from a range of sources to suit a number of requirements. These can be accessed via a variety of methods including API and FTP.

This catalogue sets out the variety of data products and services we have available with the following key to identify delivery methods, data format, who to contact and location of data set.



Delivery method



Data format



Data site



Location of data set

The following delivery methods are available:



Application Programming Interface (API)



Email



File Transfer Protocol (FTP) / Secure File Transfer Protocol (SFTP)



Web portal

This catalogue uses a number of abbreviations and acronyms that you can review in [our online glossary](#).

Overview of data products and services			UK	Europe	Global	
Historical	Marine	Modelled hindcast wind and wave data		✓		
	Wind	Historic wind at height data - Hindcast		✓		
		Historic wind at height data - Operational archive				✓
	Archive	National Meteorological Archive	✓			
Observations	Bulletins	Global marine coded observations			✓	
		Observational data	✓			
	Lightning	Lightning strike location data		✓		
	Location	Regional data	✓			
	Rainfall	Observed data from weather stations/rain gauges				✓
		Rainfall radar data	✓	✓		
Forecasts	Atmospheric	Atmospheric Dispersion Modelling Systems	✓			
		Atmospheric models	✓		✓	
		Nowcasting	✓			
	Location	Map images			✓	
		Mountain forecast	✓			
		Site-Specific forecast data			✓	
	Marine	Marine data		✓	✓	
	Seasonal	Global Seasonal Forecast System (GLOSEA)			✓	
Climate	UK climate observation products		✓		✓	
	Global climate observation products		✓		✓	
	Global climate dashboard				✓	
	Seasonal forecast data				✓	
	Climate Projections (including UKCP)				✓	
	Decadal forecast data				✓	
	Met Office Climate Data Portal		✓		✓	
	Coupled Model Intercomparison Project (CMIP)				✓	
Severe Weather	National Severe Weather Warning Service		✓			
	Global tropical cyclone tracks				✓	
Air Quality and Pollen	Air Quality Forecast		✓			
	UK Seasonal Pollen Forecast Service		✓			
Industry specific sectors	We provide a range of industry specific data sets and packages for industry sectors including for Aviation, Energy and Surface Transport.					
Third Party License Data	The Met Office are a licensing agent for EUMETNET (European National Meteorological Services) data and can provide a range of products and services within their data catalogues.					

Contents

Key products and services	6
National Severe Weather Warning Service (NSWWS).....	7
Atmospheric model outputs	7
Media delivery services	7
Historical data	8
Marine	9
Modelled hindcast wind and wave data.....	9
Wind	9
Historic wind at height data – Hindcast.....	9
Historic wind at height data – Operational archive.....	9
Archive	
National Meteorological Archive.....	9
Observational data	10
Bulletins.....	11
Global marine coded observations.....	11
Observational data	11
Lightning	11
Lightning strike location data (LEELA)	11
Location.....	11
Regional data	11
Rainfall	12
Observed data from weather stations/ rain gauges	12
Rainfall radar data.....	12
Weather forecasts	13
Atmospheric.....	14
Atmospheric Dispersion Modelling Systems.....	14
Nowcasting.....	14
Location.....	14
Mountain forecast.....	14
Map images.....	14
Site-specific forecast data	15
Global spot.....	15
Location-specific modelled data.....	15

Marine	15
Marine data	15
Seasonal.....	16
Global Seasonal Forecast System (GLOSEA).....	16
Global tropical cyclone tracks	16
Climate	17
UK climate observation products.....	18
Global climate observation products	18
Global climate dashboard	18
Seasonal forecast data	19
Climate Projections (including UKCP).....	19
Decadal forecast data.....	19
Met Office Climate Data Portal.....	20
Coupled Model Intercomparison Project (CMIP)	20
Air quality and pollen	21
Air Quality Forecast.....	22
UK Seasonal Pollen Forecast Service	22
Business and industry	23
4D-Trajectory.....	24
Leaf fall and low adhesion forecast.....	24
Location-specific wind production forecast.....	24
Met Office Rainfall and Evapotranspiration Calculation System	24
Road surface temperature forecast.....	25
Decider	25
External data channels.....	25
Contact us	26

Key products and services

The Met Office offers a wide range of products and services to suit user needs. This section highlights the most commonly requested and used from our catalogue.

National Severe Weather Warning Service (NSWWS)

A Met Office developed warning service based on the impact of the UK weather. Recognised by UK government as the national warning service for the UK. Providing quality, consistent information, support, advice and guidance warning up to seven days ahead for eight different weather types: rain, thunderstorms, wind, snow, lightning, ice, fog and extreme heat. This service is free of charge.



API



GeoJSON



UK

Atmospheric model outputs

Atmospheric models customised via parameters. Free plans and monthly subscriptions are available along with invoice plans based on the amount of data required.

Deterministic models provide gridded forecast data. Available at 2km resolution for the UK and 10km resolution globally.

Met Office Global and Regional Ensemble Prediction System (MOGREPS) provides a probabilistic forecast model. Available at 2km resolution for the UK and 20km resolution globally.

120 parameters are available with the following parameter attributes applicable:

- Single levels (surface, atmosphere, specific level)
- Pressure levels
- Height levels
- Depth levels



API



GRIB2



Met Office
Weather DataHub



Global

Media delivery services

A range of our data can be delivered through the media delivery services. For example, reviews of the UK weather, forecast guidance and National Severe Weather Warnings. Subject to eligibility. For TV, radio, digital and mobile audiences.



Historical data

We offer a range of historical data, including hindcast datasets and datasets that incorporate historical data to provide additional capabilities.

Marine

Modelled hindcast wind and wave data

Offers wind and wave parameters, used in sea defences, offshore operations and marine consultancy. From 1980-2023. Available on a 3-hourly basis for the UK and an hourly basis for Europe.



FTP



CSV, NETCDF



Europe

Wind

Historic wind at height data – Hindcast

Available on an hourly basis, measuring wind speed and direction at any hub height from 1979 to June 2015. Beneficial for climate vulnerability, risk assessment, financial feasibility studies and evidence for insurance purposes.



FTP



CSV, PDF, ASCII



Europe

Historic wind at height data – Operational archive

Available on an hourly basis, measuring wind speed and direction at any hub height. Beneficial for training forecast models and risk assessment.



FTP



CSV



Global

Archive

National Meteorological Archive

The archive collection includes daily weather reports for the UK from 1860 to the present, weather reports from around the world, private weather diaries dating back to early 18th century, marine weather logbook including records from historic voyages and the original Beaufort Scale.



National
Meteorological
Library and Archive



Global

Observational data

Our observational datasets are built from measurements of actual weather conditions by instruments such as weather stations, buoys, radars, or satellites.



Bulletins

Global marine coded observations

Marine observations gathered from marine automatic weather stations, voluntary observing ships, shipborne automatic weather stations, drifting buoys, and Argo floats. Used within forecasts and warning to help ships and offshore operators to avoid severe weather at sea, predicts the future state of the atmosphere and aids understanding of the global climate.



FTP



Alphanumeric,
BUFR/IWXXM



Global

Observational data

Measures weather conditions through hourly land synoptic, Marine synoptic, buoy observations, light vessels, hourly rainfall, national climate and radiosonde. Covering 24 hours and all WMO and MMS stations. Popular parameters include rainfall and temperature.



FTP



Alphanumeric,
BUFR/IWXXM



DPT



Global

Lightning

Lightning strike location data (LEELA)

Lightning Electromagnetic Emission Location by arrival time difference. An automatic lightning location network consisting of ten sensors across Europe, which determine the location and time of lightning strikes over a wide geographical area. Beneficial in keeping the public and aviation safe. Bulletins are offered 24/7/365.



API



CSV, BUFR/
IWXXM



Europe

Location

Regional data

Offers temperature, rainfall, sunshine, and other parameters. Used in weather sensitivity analysis and demand model analysis. Available on a daily, weekly, and monthly basis across regions, from 1961.



CSV



UK

Rainfall

Observed data from weather stations/ rain gauges

Rainfall totals on a minute, hourly, daily and monthly basis gathered from rain gauges/weather stations. Beneficial in understanding the impacts of rainfall on business operations.



FTP



Email



CSV



Global

Rainfall radar data

Used in water supply and demand, flood risk and river flow modelling. Offers rainfall intensity and rainfall total parameters at 5-minute intensity and hourly totals for the UK and Ireland. Radars available for Northwestern Europe with images every 15 minutes. UK resolution at 1km or 500m and Northwestern Europe resolution available at 5km or 1km.



FTP



BUFR, HDF5



Europe

Weather forecasts

Our weather forecasts are an estimate of the future state of the atmosphere. These are created by estimating the current state of the atmosphere using observations, and then calculating how this state will evolve in time using a Numerical Weather Prediction computer model. Our forecasting capability ranges from seabed to space and spans across the globe.



Atmospheric

Atmospheric Dispersion Modelling Systems

Helps to predict the concentration and deposition of airborne pollutants, air quality assessment and emission inventories. Offers air temperature, mean wind speed, mean wind direction, hourly rainfall, total cloud amount and relative humidity parameters. Available hourly across a monthly basis.



Email



FTP



CSV



UK

Nowcasting

Detailed guidance on the location extents and timing of imminent, often, high impact weather events. Parameters include cloud, snow, visibility, wind, precipitation, temperature, humidity and lightning. Available on an hourly basis.



FTP



**Nimrod
multi-field format**



UK

Location

Mountain forecast

Forecasts a selection of the main hill and mountain areas in the UK. Designed for walkers, mountaineers and others taking part in outdoor activities. Issued every day before 6pm, covering the next two days and a brief outlook for the following 3 days.



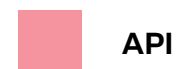
**Met Office
website**



UK

Map images

Extracted map images from the global model. For temperature at surface, precipitation rate, cloud cover and pressure reduced to mean sea level. Service free of charge.



API



PNG



**Met Office
Weather DataHub**



Global

Site-specific forecast data

Global spot

Deterministic site-specific forecast. Provides latitude-longitude co-ordinates to receive hourly, 3-hourly and daily weather forecast information. Free plan and monthly subscriptions are available based on the number of calls made per day. An invoice plan is available for large volume requirements.



API



GeoJSON



Met Office
Weather DataHub



Global

Location-specific modelled data

Across 9000 postcode sectors, and up to 58 parameters including temperature, wind, precipitation, snow, solar radiation, cloud and probability. Available at hourly, 3-hourly and 6-hourly and daily rates forecasted up to 14 days ahead. Historic data from 2011. Area specific forecast, population weighted.



FTP



CSV



UK

Marine

Marine data

Northwest Shelf Ocean (AMM15 PHY)

Ocean physics analysis and 6-day forecast for the North-West European Atlantic shelf at 1.5km resolution on 33 depth levels.

Northwest Shelf Wave (AMM15 WAV)

Surface wave analysis and 6-day forecast for the North-West European Atlantic shelf at 1.5km resolution.

Northwest Shelf Ecosystem (AMM7 PHY-BGC)

Ocean physics and ecosystem analysis and 6-day forecast for the North-West European Atlantic shelf at 7km resolution on 24 depth levels.

Global-Ocean (FOAM-ORCA025 PHY)

Global ocean analysis and 7-day forecast, coupled to global atmosphere model at a $0.25^\circ \times 0.25^\circ$ grid resolution on 43 depth levels.

OSTIA Foundation SST and Sea-Ice

Global observation-based Sea Surface Temperature and Ice concentration analysis at a $0.05^\circ \times 0.05^\circ$ grid resolution.



FTP/SFTP



NETCDF-4



UKMCAS

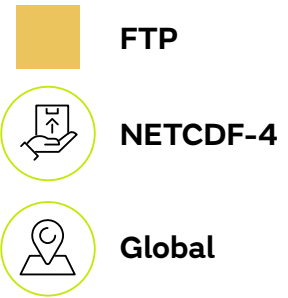


Global

Seasonal

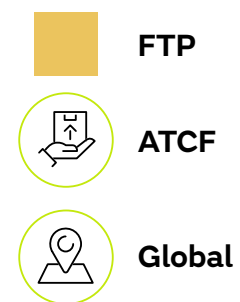
Global Seasonal Forecast System (GLOSEA)

Predicts global forecasts for the next 7 months. Made each day from the very latest observations to give the most up-to-date information. Comprised of 4 component models: atmosphere, land surface, ocean, and sea-ice.



Global tropical cyclone tracks

Guidance messages issued four times per day, highlighting forecast positions and intensities. This service is not an official tropical forecast and therefore should not be used exclusively to make decisions which will affect life or property. Available bulletins: deterministic tracks from the Global Model and probabilistic forecast from MOGREPS-G.



An aerial photograph of a dense forest, showing a variety of tree species and shades of green. The canopy is thick, with some taller trees standing out. The overall scene is lush and vibrant.

Climate

The Met Office Hadley Centre for Climate Science and Services provides world-class guidance on the science of climate variability and change and is the primary focus in the UK for climate science.

UK climate observation products

UK observations collected at weather stations over the last century or more are quality controlled and used to produce gridded (1km grid) and regional average products that capture how the climate of the UK has varied and changed.

Includes information on temperature, rainfall, sunshine, relative humidity, mean sea level pressure, vapour pressure, wind speed, days of ground frost and days of snow lying.

Used to understand the current state of the climate of the UK, to compare with climate model simulations and to provide information relevant to climate change adaptation.



Web portal



NETCDF, CSV, Text



UK

Global climate observation products

Global observations from weather stations, ships, drifting and moored buoys, Argo floats, satellites, and others over the last century or more are quality controlled and used to produce gridded products that capture how the global climate has varied and changed.

Includes information on near-surface temperature, sea-surface temperature, sea ice cover, sub-surface ocean temperature and salinity, near-surface humidity, upper tropospheric humidity, indicators of temperature and precipitation extremes and other meteorological weather station measurements.

Used to understand the current state of the global climate and to compare with climate model simulations.



Web portal



**NETCDF
and CSV files**



Global

Global climate dashboard

Timeseries of key global climate indicators over the last century or more are gathered from international providers and displayed in graphical form, alongside simple data files.

Includes information on near-surface temperature, greenhouse gas concentrations, ocean heat content, sea ice cover, global sea level, amongst other indicators.

Used to understand the current state of the global climate and its historical context.



Web portal



PNG and CSV files



Global

Seasonal forecast data

Ensembles of seasonal forecast data are produced each month from our climate model initialised with latest observational data. These forecast datasets are delivered to users worldwide who want to plan for increased risk of various weather scenarios out to a few months ahead.



Web portal



Global

Climate Projections (including UKCP)

The UK Climate Projections launched in 2018 (UKCP18) provides the latest set of observations and climate change projections out to 2100 in the UK and globally and out to 2300 for sea-level projections.

UKCP18 comprises a suite of information and data products and includes:

- (a) climate observations that go back to the mid-1800s
- (b) probabilistic projections over UK land areas and a set of spatially coherent climate projections over
- (c) the globe at 60 km
- (d) Europe at 12 km and
- (e) the UK at 5 km spatial scales

For sea-level projections, the suite includes data out to 2100 and using a more exploratory approach, out to 2300.

The datasets are designed to help decision-makers assess their risk to exposure to current and future climate changes.



Web portal



Global

Decadal forecast data

Ensembles of decadal forecast data are produced each year from our climate model, initialised with latest observational analysis of the atmosphere, ocean, land and sea ice. They provide global prediction data of the near-term climate out to 10 years ahead.



Web portal



Global

Met Office Climate Data Portal

The climate data portal allows viewing and interaction with a range of climate and socioeconomic datasets overlaid on a geographic area.

Climate data includes UK and global observations and projections on temperature and precipitation-related variables, drought, sea level and wind speed.

Socioeconomic data includes UK demography, life expectancy, inequality, population, rail infrastructure and social cohesion.

The data can also be used in ArcGIS Online maps or applications, while much of it can also be downloaded in a variety of formats. The data portal also includes the Local Authority Climate Service, which provides tools and resources designed to help local authorities understand and adapt to changes in their local climate.



ArcGIS Online



**Shapefile, KML,
CSV, GeoJSON**



Global and UK

Coupled Model Intercomparison Project (CMIP)

Climate models from more than 50 international modelling centres run standardised experiments, allowing their results to be evaluated and compared. The Met Office Hadley Centre has supported the latest phase of CMIP, CMIP6 with a total of nine different configurations of two models, HadGEM3-GC3.1 and UKESM1.

Variables include temperature, rainfall, wind, sea ice area, humidity and radiation flux.

The use of data from multiple climate models provides a means of sampling the range of climate outcomes, accounting for uncertainty in both climate models and in emission scenarios. Results cover the past, present and future. CMIP results contribute to major climate science reports and influence climate policy.



Web portal



NetCDF



Global



Air quality and pollen

To help the public stay safe and thrive, the Met Office offer datasets covering air quality and pollen forecasts.

Air Quality Forecast

Forecast of the air quality formed through emissions of pollutants, transport, and dispersion of pollutants by winds, chemical reactions amongst reactive gases and aerosols and removal processes such as rain and deposition on surfaces.



FTP



**CSV (site specific)
NetCDF (gridded)**



UK

UK Seasonal Pollen Forecast Service

Breakdown of pollen types such as grass, tree, nettle and fungal spore pollen and their peak times within a given season. Available in 5-day forecast from March-September. Historical data gathered from 2011.



FTP



CSV, XML



UK




An aerial photograph of a winding asphalt road cutting through a dense forest of evergreen trees covered in a thick layer of snow. The road curves from the top left towards the bottom right of the frame. The overall color palette is dominated by whites and light blues, creating a serene winter atmosphere.

Business and industry

From road to rail to aviation and energy, we provide a range of products and services to help optimise operations and improve resilience across a broad variety of industry sectors.

4D-Trajectory

Provides high resolution meteorological data tailored to unique flight trajectory requests. Helps to increase flight efficiency, environmentally sustainability of aviation operations, ability to plan an optimum flight path and better fuel load calculations. Parameters available: wind U, wind V, temperature, turbulence, and relative humidity on an hourly basis. On a pay-per-request service.

-  API
-  CovJSON
-  Global



Leaf fall and low adhesion forecast

Used within the rail industry to forecast leaf fall risk, low adhesion risk, wind-throw risk, and traffic volume. Offered hourly and up to 10 days ahead in the Autumn.

-  Email
-  CSV, PDF
-  UK

Location-specific wind production forecast

Forecasts wind speed and direction, solar radiation, temperature, precipitation, and more parameters available used in energy forecasting, planning and operational maintenance and energy consultancy. Offered hourly and produced 5-days ahead.

-  FTP
-  CSV
-  Global

Met Office Rainfall and Evapotranspiration Calculation System

For modelling soil moisture and runoff. Runs weekly, producing daily information for a range of crop types and actual soil properties.

-  FTP
-  Text
-  UK

Road surface temperature forecast

Forecasts surface temperature, sub-surface temperature, road state. Surface water (water, snow, ice) and many more parameters available. Offered hourly up to 5-days ahead. Used with road winter/summer maintenance, gritting, rail and runway operations, and autonomous vehicles.



Web portal



CSV, PDF



Global

Decider

14-28-day sub-seasonal forecasting tool providing an improved outlook, built and supported by climatology data from 1850. It uses large volumes of ensemble weather data to create quick and understandable forecasts, based on a set of 30 Met Office weather regimes, to support with risk management.



Web portal



**CSV, Text,
HTML, PNG**



Europe

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