

## Chapter 1 : UK weather forecast - Met Office

*Elements Weather Forecast is a free Windows 8 weather app which shows the hourly forecasting of weather of the whole world and of upcoming 7 days as well. You can also check the sunrise, sunset, moon rise, moon set, and day length of 7 days of any city around the world.*

Ancient forecasting[ edit ] For millennia people have tried to forecast the weather. For example, it might be observed that if the sunset was particularly red, the following day often brought fair weather. This experience accumulated over the generations to produce weather lore. However, not all[ which? It was not until the invention of the electric telegraph in that the modern age of weather forecasting began. He also promoted the development of reliable tide tables around British shores, and with his friend William Whewell , expanded weather record-keeping at British Coast guard stations. Robert FitzRoy was appointed in as chief of a new department within the Board of Trade to deal with the collection of weather data at sea as a service to mariners. This was the forerunner of the modern Meteorological Office. A storm in that caused the loss of the Royal Charter inspired FitzRoy to develop charts to allow predictions to be made, which he called "forecasting the weather", thus coining the term "weather forecast". His warning service for shipping was initiated in February , with the use of telegraph communications. The first daily weather forecasts were published in The Times in As the electric telegraph network expanded, allowing for the more rapid dissemination of warnings, a national observational network was developed, which could then be used to provide synoptic analyses. Instruments to continuously record variations in meteorological parameters using photography were supplied to the observing stations from Kew Observatory â€” these cameras had been invented by Francis Ronalds in and his barograph had earlier been used by FitzRoy. History of numerical weather prediction It was not until the 20th century that advances in the understanding of atmospheric physics led to the foundation of modern numerical weather prediction. He described therein how small terms in the prognostic fluid dynamics equations governing atmospheric flow could be neglected, and a finite differencing scheme in time and space could be devised, to allow numerical prediction solutions to be found. Richardson envisioned a large auditorium of thousands of people performing the calculations and passing them to others. However, the sheer number of calculations required was too large to be completed without the use of computers, and the size of the grid and time steps led to unrealistic results in deepening systems. It was later found, through numerical analysis, that this was due to numerical instability. Broadcasts[ edit ] The first ever daily weather forecasts were published in The Times on August 1, , and the first weather maps were produced later in the same year. These included gale and storm warnings for areas around Great Britain. Harold Noyes in This was brought into practice in after World War II. George Cowling gave the first weather forecast while being televised in front of the map in TWC is now a hour cable network. Some weather channels have started broadcasting on live broadcasting programs such as YouTube and Periscope to reach more viewers. How models create forecasts[ edit ] An example of mbar geopotential height and absolute vorticity prediction from a numerical weather prediction model Main article: Numerical weather prediction The basic idea of numerical weather prediction is to sample the state of the fluid at a given time and use the equations of fluid dynamics and thermodynamics to estimate the state of the fluid at some time in the future. The main inputs from country-based weather services are surface observations from automated weather stations at ground level over land and from weather buoys at sea. The World Meteorological Organization acts to standardize the instrumentation, observing practices and timing of these observations worldwide. Research flights using reconnaissance aircraft fly in and around weather systems of interest such as tropical cyclones. The data are then used in the model as the starting point for a forecast. These equations are initialized from the analysis data and rates of change are determined. The rates of change predict the state of the atmosphere a short time into the future. The equations are then applied to this new atmospheric state to find new rates of change, and these new rates of change predict the atmosphere at a yet further time into the future. This time stepping procedure is continually repeated until the solution reaches the desired forecast time. The length of the time step chosen within the model is related to the distance between the points on the computational grid, and is

chosen to maintain numerical stability. This can be in the form of statistical techniques to remove known biases in the model, or of adjustment to take into account consensus among other numerical weather forecasts. This guidance is presented in coded numerical form, and can be obtained for nearly all National Weather Service reporting stations in the United States. As proposed by Edward Lorenz in , long range forecasts, those made at a range of two weeks or more, are impossible to definitively predict the state of the atmosphere, owing to the chaotic nature of the fluid dynamics equations involved. In numerical models, extremely small errors in initial values double roughly every five days for variables such as temperature and wind velocity. Within any modern model is a set of equations, known as the primitive equations, used to predict the future state of the atmosphere. Additional transport equations for pollutants and other aerosols are included in some primitive-equation mesoscale models as well. Different models use different solution methods: This can be a valid way of forecasting the weather when it is in a steady state, such as during the summer season in the tropics. This method of forecasting strongly depends upon the presence of a stagnant weather pattern. Therefore, when in a fluctuating weather pattern, this method of forecasting becomes inaccurate. It can be useful in both short range forecasts and long range forecasts. If the pressure drop is rapid, a low pressure system is approaching, and there is a greater chance of rain. Rapid pressure rises are associated with improving weather conditions, such as clearing skies. Along with pressure tendency, the condition of the sky is one of the more important parameters used to forecast weather in mountainous areas. Thickening of cloud cover or the invasion of a higher cloud deck is indicative of rain in the near future. High thin cirrostratus clouds can create halos around the sun or moon , which indicates an approach of a warm front and its associated rain. The approach of a line of thunderstorms could indicate the approach of a cold front. Cloud-free skies are indicative of fair weather for the near future. The use of sky cover in weather prediction has led to various weather lore over the centuries. Nowcasting meteorology The forecasting of the weather within the next six hours is often referred to as nowcasting. A human given the latest radar, satellite and observational data will be able to make a better analysis of the small scale features present and so will be able to make a more accurate forecast for the following few hours. Use of forecast models[ edit ] An example of mbar geopotential height prediction from a numerical weather prediction model In the past, the human forecaster was responsible for generating the entire weather forecast based upon available observations. Humans can use knowledge of local effects that may be too small in size to be resolved by the model to add information to the forecast. While increasing accuracy of forecast models implies that humans may no longer be needed in the forecast process at some point in the future, there is currently still a need for human intervention. What makes it a difficult technique to use is that there is rarely a perfect analog for an event in the future. It remains a useful method of observing rainfall over data voids such as oceans, [74] as well as the forecasting of precipitation amounts and distribution in the future. A similar technique is used in medium range forecasting, which is known as teleconnections, when systems in other locations are used to help pin down the location of another system within the surrounding regime. Temperatures are given in Fahrenheit. Most end users of forecasts are members of the general public. Thunderstorms can create strong winds and dangerous lightning strikes that can lead to deaths, power outages, [77] and widespread hail damage. Heavy snow or rain can bring transportation and commerce to a stand-still, [78] as well as cause flooding in low-lying areas. Knowledge of what the end user needs from a weather forecast must be taken into account to present the information in a useful and understandable way. In addition, some cities had weather beacons. Increasingly, the internet is being used due to the vast amount of specific information that can be found. Severe weather alerts and advisories[ edit ] A major part of modern weather forecasting is the severe weather alerts and advisories that the national weather services issue in the case that severe or hazardous weather is expected. This is done to protect life and property. Other forms of these advisories include winter weather, high wind, flood , tropical cyclone , and fog. Specialist forecasting[ edit ] There are a number of sectors with their own specific needs for weather forecasts and specialist services are provided to these users. Terminal Aerodrome Forecast Because the aviation industry is especially sensitive to the weather, accurate weather forecasting is essential. Fog or exceptionally low ceilings can prevent many aircraft from landing and taking off. This reduces the distance required for takeoff, and eliminates potential crosswinds. Marine weather

forecasting Commercial and recreational use of waterways can be limited significantly by wind direction and speed, wave periodicity and heights, tides, and precipitation. These factors can each influence the safety of marine transit. Consequently, a variety of codes have been established to efficiently transmit detailed marine weather forecasts to vessel pilots via radio, for example the MAFOR marine forecast. Agriculture[ edit ] Farmers rely on weather forecasts to decide what work to do on any particular day. For example, drying hay is only feasible in dry weather. Prolonged periods of dryness can ruin cotton , wheat , [96] and corn crops. While corn crops can be ruined by drought, their dried remains can be used as a cattle feed substitute in the form of silage. For example, peach trees in full bloom can have their potential peach crop decimated by a spring freeze. Different indices, like the Forest fire weather index and the Haines Index , have been developed to predict the areas more at risk to experience fire from natural or human causes. Conditions for the development of harmful insects can be predicted by forecasting the evolution of weather, too. Utility companies[ edit ] An air handling unit is used for the heating and cooling of air in a central location click on image for legend. Degree day Electricity and gas companies rely on weather forecasts to anticipate demand, which can be strongly affected by the weather. They use the quantity termed the degree day to determine how strong of a use there will be for heating heating degree day or cooling cooling degree day. Cooler temperatures force heating degree days one per degree Fahrenheit , while warmer temperatures force cooling degree days. Weather forecasts can be used to invest in the commodity market, such as futures in oranges, corn, soybeans, and oil. A group based at Camp Bastion provides forecasts for the British armed forces in Afghanistan. Military weather forecasters provide pre-flight and in-flight weather briefs to pilots and provide real time resource protection services for military installations. Naval forecasters cover the waters and ship weather forecasts. The United States Navy provides a special service to both themselves and the rest of the federal government by issuing forecasts for tropical cyclones across the Pacific and Indian Oceans through their Joint Typhoon Warning Center. Air Force forecasters cover air operations in both wartime and peacetime operations and provide Army support; [] United States Coast Guard marine science technicians provide ship forecasts for ice breakers and other various operations within their realm; [] and Marine forecasters provide support for ground- and air-based United States Marine Corps operations.

## Chapter 2 : Weather forecasting - Wikipedia

*The Weather Channel's Dr. Rick Knabb looks at hurricane expert takes a look at landfalling hurricanes in the U.S. in November.*

UK forecast for the next 5 days  
Headline: A mix of sunshine and showers today. Sunny spells for many, but with blustery winds at times. There is also a risk of showers, which could be heavy and thundery. The showers will be most frequent in the south and west. Clear spells overnight for many, but with a risk of further blustery showers. Turning cold overnight, with a frost in some northern and western parts of the UK. Showers dying out during the morning, then dry, bright and sunny. Breezy at times, but mild for this time of year. Rain arriving in Northern Ireland and western Scotland later. Outlook for Wednesday to Friday: Northern and western parts of the UK are likely to see some wet and windy weather on Wednesday. Otherwise a mainly dry and mild period, with cloudy skies at times. Friday and the weekend look mostly dry with variable, sometimes large amounts of cloud, with the brightest conditions likely to the north of high ground and possibly more generally across northern and north-eastern parts of the British Isles. Overnight mist and fog patches are possible, which could be slow to clear. The only exception will be western Scotland and perhaps parts of Northern Ireland which may see some wet and windy weather, chiefly at first. After a locally chilly start, daytime temperatures will again be mild. During the following week little change is expected to the weather. The far west and northwest could have some patchy rain, whilst the majority hold onto settled conditions. However, a general drop in temperature is forecast, with an increasing risk of night frost. This period is likely to begin with a continuation of the mainly dry conditions, with variable cloud and some sunshine, once morning fog patches clear. However, there will be an increasing chance of some more unsettled interludes developing, with showers or longer spells of rain spreading to many areas at times. Temperatures are likely to be below average overall, with a marked increase in the likelihood and extent of frosts. These colder conditions will be accompanied by an increased chance of snow, particularly for northern hills, during any spells of more unsettled weather.

### Chapter 3 : Manchester Weather News – New Hampshire Weather Updates - WMUR News 9

*The Weather Channel and [blog.quintoapp.com](http://blog.quintoapp.com) provide a national and local weather forecast for cities, as well as weather radar, report and hurricane coverage.*

You can also check the sunrise, sunset, moon rise, moon set, and day length of 7 days of any city around the world. The app also uses your GPS location to show local weather forecasting. The app even lets you pin individual city on the Start screen of Windows 8, so that you can track the weather of any city directly through the start screen of the app. The background of the weather changes as per the weather of the particular city. You can even change the background image of the individual city by importing images from your PC. The additional feature of the app is that it even shows wind speed, wind direction, and precipitation. After launching the app, it will ask you to allow the app to use your GPS location. To pin, right click anywhere on the screen. You will find different options: Pin, Background, Update, etc. Pin lets you Pin that particular city on the Start screen. It displays current temperature and weather forecast of the upcoming 3 days on the Live Tile. Background lets you change the background image of that particular city by importing image from your PC. To add more cities in the app, click on Add cities option at the bottom. Type the name of the city, it will show you relevant results. Choose the city you want to add and then click OK. You can add as many cities as you want. You can even arrange the sequence of the cities as per your preference. It displays details of a single city on the screen. Scroll right to see weather forecast of another added city. You can even add summary of weather forecasting to check weather of different cities at one place. The background of the app automatically changes as per the weather of the particular city. This app lets you change the background image of individual cities. You can even pin the individual cities on the start screen. It will display all the pinned cities without replacing the previous tile. Also try another weather app for windows 8: Elements Weather Forecast is one of the best weather apps for Windows 8. It shows the weather forecast of all the cities of the world. It shows real time weather and changes background accordingly. If you are looking for a weather app, then you should definitely try this app.

## DOWNLOAD PDF WEATHER FORECASTING (WEATHER UPDATE)

### Chapter 4 : Current Weather Forecasts, Live Radar Maps & News | WeatherBug

*Latest weather conditions and forecasts for the UK and the world. Includes up to days of hourly forecast information, warnings, maps, and the latest editorial analysis and videos from the BBC.*

Detailed Forecast Tonight Clear, with a low around East wind 11 to 15 mph, with gusts as high as 26 mph. Monday Sunny, with a high near East southeast wind 9 to 15 mph, with gusts as high as 25 mph. Monday Night Partly cloudy, with a low around East wind around 10 mph. Tuesday A 10 percent chance of rain after 4pm. Partly sunny, with a high near East wind around 9 mph becoming south in the morning. Tuesday Night A 30 percent chance of rain, mainly after 10pm. Mostly cloudy, with a low around South wind 5 to 9 mph becoming light south southeast in the evening. Wednesday A chance of rain before 10am, then a chance of showers after 10am. Cloudy, with a high near Wednesday Night A 20 percent chance of showers. Thursday Partly sunny, with a high near Thursday Night Partly cloudy, with a low around Friday Mostly sunny, with a high near Friday Night Partly cloudy, with a low around Saturday A slight chance of rain. Saturday Night A slight chance of rain. Sunday A chance of rain. Mostly cloudy, with a high near Additional Forecasts and Information.

### Chapter 5 : Hurricane & Tropical Cyclones | Weather Underground

*Weather updates wherever you are - Get local forecasts when you're at home or worldwide weather updates when you're away. 5. Live weather 24/7 - Check up to 15 days in advance or check up for accurate weather forecasts every minute!*

### Chapter 6 : Free Windows 8 Weather Forecasting App With World Weather Update

*Get the World weather forecast. Access hourly, 10 day and 15 day forecasts along with up to the minute reports and videos from [blog.quintoapp.com](http://blog.quintoapp.com)*

### Chapter 7 : Glossary - NOAA's National Weather Service

*This will keep temperatures much below normal, and will result in a few inches of snow across the Central Plains as a weak weather system passes through mid-week. Cold air and associated high pressure will increase winds across California resulting in elevated-to-critical fire weather threats this week.*

### Chapter 8 : Weather Forecast & Reports - Long Range & Local | Weather Underground

*Get the Dhaka weather forecast. Access hourly, 10 day and 15 day forecasts along with up to the minute reports and videos for Dhaka, Bangladesh from [blog.quintoapp.com](http://blog.quintoapp.com)*

### Chapter 9 : New Orleans Weather News – Southeast Louisiana Weather Updates – WDSU News

*View the latest weather conditions and extended forecast on CNN.*