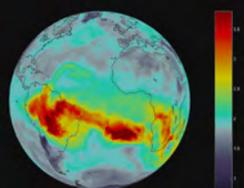
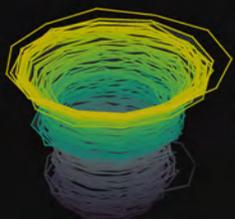


FATAL FORECAST

8 x 48 min.

Tornadoes, Hurricanes, Heat Waves,
the Polar Vortex, Floods, Droughts, Tsunamis,
Thunderbolts & Lightning

Yet severe weather events
still catch meteorologists by surprise. Why?



FATAL FORECAST

8 x 48 min.

SERIES FORECAST

Remember when watching the weather forecast was a soothing alternative to the news? These days the weather forecast often seems to be the news. Whether you want to use terms like Climate Change or Global Warming, few can deny that something is going on with the weather. It's getting to feel like every other day becomes the hottest, coldest, dampest or driest ever recorded somewhere. The massive storms which batter the eastern seaboard of the United States are becoming an almost annual event. Drought driven wildfires rage in California and Australia. We see more frequent, and more extreme heat waves, droughts, fires, torrential rainstorms, tornadoes, hurricanes and snowstorms that anyone can remember. Is this only the usual ups and downs of time, or is the climate around us really changing? If we're going to talk about climate change, shouldn't we know something about the climate?

That's where this TV series comes in. Our panel of experts enhance the picture to outline the basics of these major weather events. Our panelists are on hand to describe how a hurricane is formed, what a Microburst is: Or, for that matter, how the heat from a bolt of lightning is 50 times higher than the surface of the sun.



FATAL FORECAST will ask and sometimes be able to answer, some often asked questions about Bad Weather.

Such as:

- We communicate via satellite and can put people on the moon, surely we can do a better job of predicting the weather?
- Why are some weather events still so difficult to predict?
- Are 'we' getting any better at predicting these events?
- What technology exists to manipulate the weather?
- And... What should we do, that is, ethically speaking?

Extreme weather bolstered by CGI, a great soundtrack and a smart, distinguished line-up of meteorologists, researchers, scientists and storm hunters, this 8 part series will ask some equally fundamental questions about the increase of unpredictable weather, and what our changing climate might mean for future generations.

What should we know about Major Storms? How should we prepare for a world where the only thing that's predictable, is unpredictability? Here are the answers to some of those vital questions, with an in-depth look at the increase in major weather events, and their consequences.

So pack your survival gear, cause there's some extreme weather on the way, in **FATAL FORECAST**!

1. TORNADOES

Most death and destruction inflicted by tornadoes in North America occurs during outbreaks - large-scale weather events that can last one to three days and span huge areas. The largest Tornado outbreak ever recorded took place in 2011. It spawned 363 tornadoes across the United States and Canada, killing more than 350 people and causing \$11 billion in damage. A newly published study shows that the average number of tornadoes in these outbreaks has risen since 1954, and that the chance of extreme outbreaks - tornado factories like the one in 2011 - has also increased. "It could be global warming, but the usual tools, the observational record and computer models, are not up to the task of answering this question yet." Every year, North America sees dozens of tornado outbreaks. Some are small and may give rise to only a few twisters: others, such as the so-called "super outbreaks" of 1974 and 2011, can generate hundreds. In the simplest terms, tornadoes are ranked on a zero-to-five scale of intensity.



2. HURRICANES

There seems to be ever more news stories about the violent hurricanes hitting various areas of the planet. Are these events more numerous than in the past? And even more intense? What exactly are they? How are they formed? Hurricanes can be described as giant heat engines that produce energy on a large scale. Serious "tropical storms" which can reach speeds of up to 160 miles per hour. They can also trigger 2.4 trillion liters of rain per day. Hurricanes primarily occur in the Caribbean Sea, the eastern Pacific Ocean, the southern Atlantic Ocean and the Gulf of Mexico. These strong winds are so powerful and destructive that they pull out entire buildings root and stem, picking up boats and cars and transferring them several miles away to where they eventually land. In this episode, with the guidance and help of our experts, we will also try to understand if the number and strength of hurricanes is really on the increase.



3. HEAT WAVES

Heatwaves can overwhelm emergency services and increase the likelihood of heat-related deaths. While temperatures continue to peak throughout the world, it is not so surprising that weather forecasters also predict heat waves to increase. Heat waves that last for days at a time can be lethal and can throw public services and health care into chaos. Heat waves are caused by high pressure systems that hover over an area, absorbing heat beneath it like an oven. High pressure systems push the air down. Hot air on the ground cannot escape to higher levels. Without ascending air, there are no clouds and no rain. The sun will just cook a given area until some other pressure system is strong enough to push the high pressure system away. In July 2018, heat waves set new temperature records around the world. Death Valley recorded the hottest month ever recorded on Earth. In China, new monthly temperature records have been established in 22 counties and cities. And on July 5, 2018, Ouargla, Algeria, reported 124.34 F, the highest temperature recorded reliably in Africa. Climate scientists are disturbed by the sudden onset of these extreme events.



4. THE POLAR VORTEX

Last winter the Arctic wave of frost that hit the United States brought the thermometer below -30°C in several densely populated cities. Normal life literally froze in the face of these prohibitive temperatures: going out in the open all of a sudden became dangerous, risking freezing. The polar vortex in the US has created the conditions for it to sometimes get colder on our world than on Mars: Curiosity (the rover for the exploration of the planet Mars) has recorded near the Gale Crater, on the Red Planet, a maximum low temperature of -23°C . It gets colder here. In this episode, we will try to understand more about how the polar vortex works as a system of cold, low pressure air that normally stands above the arctic. This system of cold, low pressure air that normally stands above the Arctic. Usually it remains compact and centered on the polar region, but when it weakens due to the interactions with the jet stream and the high temperatures in the stratosphere, some "lobes" of the vortex come to touch more southern latitudes. A new study study was first to show that these changes in winds high up in the stratosphere, have substantially contributed to cooler winter temperatures in Russia and Europe. The changing climatic conditions in the Arctic region can only have an effect across large swaths of the Northern Hemisphere.



5. FLOODS

Floods are the most common and widespread of all weather related natural disasters. A flood is an overflow of water on normally dry land. Floods can occur during heavy rains, when the waves of the ocean arrive on the shore, when the snow melts too quickly, or when dams and dikes break. Floods range in severity from a few inches, all the way to your house under water. They can happen in a flash, or go on for days, weeks or even longer. You can distinguish the different types of floods: a river flood, a coastal flood, a storm surge, an inland flooding, and a flash flood. Flash or Sudden floods are the most dangerous type of floods, because they combine the destructive power of a flood with incredible speed and unpredictability. Sudden floods, just as their name suggests, happen with little or no warning. Meteorologists are getting better and better at detecting floods however, and in this episode we will find out for ourselves under what circumstances floods can be predicted. Also, which areas are at risk from sudden floods?



6. DROUGHTS

Drought occurs in almost all types of climates. Of all the meteorological phenomena that can cause serious economic consequences, droughts are second only to hurricanes, according to the National Climatic Data Center. But unlike hurricanes, which are easily identified and simple to classify in terms of wind speed, drought is much more difficult to define. Most people think of a drought as an unusually dry period of time that lasts long enough to cause problems such as crop damage and lack of water supply. But since drought conditions develop for different reasons, there are different types of drought. "Drought is caused not only by lack of rainfall and high temperatures, but by overuse and overpopulation," says drought expert and meteorologist David Miskus at the National Oceanic and Atmospheric Administration's Climate Prediction Center (NOAA). In this episode we analyze the four main categories of drought: Meteorological, Agricultural drought, and Socio-economic drought. This occurs when the demand for water exceeds supply. Examples of this type of socio economic drought include excessive irrigation or when hydroelectric plants are forced to reduce energy production by low water levels.



7. TSUNAMIS

A tsunami is a series of giant waves caused by earthquakes or underwater volcanic eruptions. Out in the depths of the ocean, the tsunami waves do not increase dramatically in height. But as the waves travel inland, they accumulate at increasingly higher levels as the depth of the ocean decreases. Tsunami waves can travel as fast as jet planes on deep waters, only slowing down when shallow waters are reached. They are one of nature's deadliest forces. Tsunamis have the ability to destroy almost everything that comes their way. Unlike volcanoes where fire, heat, magma and volcanic ash cause destruction, tsunamis trigger the wrath of water. Yes, the same element of nature that supports life on Earth. They're unpredictable, and they can carry 20 tonne rocks as far as 180 metres inland. With devastating tsunamis hitting Japan and the Indian Ocean in recent history, we're all too aware of the impact these natural disasters can have: but just how bad can they get? In this episode we look at the science behind tsunamis and the question of just how massive they can actually become. Be warned.



8. THUNDERSTORMS AND LIGHTNING

There are about 2,000 thunderstorms taking place on Planet Earth at any given time. Lightning, thunder and tornadoes are all produced by thunderstorms. Generally they develop in the warmer months of spring, summer and autumn, but can occur at any time of the year. The rains caused by thunderstorms can cause sudden floods, killing more people in most years than hurricanes, tornadoes or lightning. The strong winds associated with thunderstorms have knocked down trees, power lines and mobile homes. Tornadoes can destroy all but the best constructed artificial structures. Lightning however is responsible for many fires around the world every year and takes many victims. There are around 8 million lightning strikes per day. Each one of them heats the surrounding air to 30,000 degrees Celsius. That's five times hotter than the surface of the sun. As for Stormy Weather, there are some places that see more storms than others. Take Kampala, Uganda for example, where there is an average of 240 days a year dedicated to thunderstorms.





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