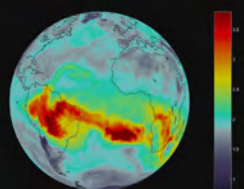
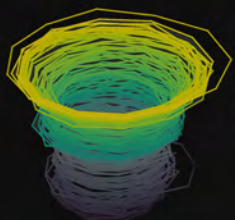


# FATAL FORECAST

8 x 48 min.

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

Severe weather events  
still catch meteorologists by surprise. Why?





# FATAL FORECAST

8 x 48 min.

## SERIES FORECAST

It's easy to take weather for granted. It's usually just a backdrop for life's bigger concerns. But now and then, weather takes center stage. 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 feels like every other day is the hottest, coldest, dampest or driest ever recorded somewhere. The massive storms that 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 5 times hotter 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

They are among the most powerful forces on earth. With swirling winds of more than 300 miles per hour, and the strength to destroy nearly everything in their path, they account for an average of 60 deaths and millions of dollars in property damage every year. From the British Isles to the French countryside to the heartland of the U.S., twisters have been tearing up the landscape and decimating entire communities in the process. Now, there is growing concern that the number of tornadoes and the regions they encompass may be increasing, due largely in part, to the effects of global warming. Fortunately, advances in science and technology are also on the rise, giving government agencies and broadcasters increasingly more time to warn the public of impending disaster. In this dramatic episode, we will travel into the eye of the storm with tornado chasers and visit the leading scientists in Europe and the U.S. who are making advances in combating these deadly forces of nature.



## 2. HURRICANES

Every year, there seems to be an ever-increasing number of news stories about violent storms hitting various areas of the planet. Known as “hurricanes” in the North Atlantic Ocean, “typhoons” in the Northwest Pacific Ocean, and “cyclones” in the South Pacific and Indian Oceans, they are all the same thing: tropical storms. Are these events more numerous than in the past? And even more intense? What exactly are they? And how are they formed? These powerful storms can reach speeds of up to 160 miles per hour and trigger 2.4 trillion liters of rain per day. With winds so destructive, they can uproot entire buildings, picking up boats and cars and hurling them several miles away. In this episode, with the guidance and help of our experts, including a storm chaser/videographer, we will try to understand if the number and strength of these powerful tropical storms is really on the increase and what, if anything, we can do about them.



## 3. HEAT WAVES

A recent report published by NOAA and NASA confirmed that 2010 to 2019 was the hottest decade since record keeping began 140 years ago. In July of 2018, new temperature records were set around the world and Death Valley experienced the hottest month ever recorded on earth. Heat waves that last for days at a time can be lethal; throwing public services and health care into chaos. They 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 simply cook a given area until some other pressure system is strong enough to push the high-pressure system away. But perhaps something more ominous is at work here. Something precipitated by man’s activities and the release of greenhouse gases. Some scientists now predict that in less than 20 years, millions of people in the U.S. could be exposed to dangerous heat conditions of up to 127 degrees Fahrenheit. We’ll speak with Dr. Michael Mann, one of the world’s foremost authorities on global warming. Dr. Mann will help to reconstruct the relationship between climate change and the unprecedented rise of life-threatening heat waves throughout the world.





## 4. THE POLAR VORTEX

Last winter, swirling, bitter cold Arctic winds swept down through Canada and into the U.S., seemingly flying in the face of global climate change. Temperatures in several densely populated American cities dropped to below  $-40^{\circ}\text{F}$ . Normal life literally froze in the face of these prohibitive temperatures. Its cause: The Polar Vortex, a low-pressure area and wide expanse of swirling cold air that is normally parked in the polar regions, but expand in the winter sending cold air southward. How is it possible that in a world experiencing the hottest temperatures on record, the vortex could create conditions on Earth that are even colder than those on Mars? In this episode, we will meet with scientists throughout the world who are investigating the science behind the polar vortex in order to gain a greater understanding of its effect on our weather. Among them, Dr. Darryn W. Waugh at Johns Hopkins University who will take us for a ride along the jetstream to help understand why winter temperatures in the northern hemisphere are plummeting and if holes in the Arctic ozone layer are to blame. Still other studies are investigating whether changes in the winds and temperatures high up in the stratosphere have substantially contributed to cooler winter temperatures across Russia, Europe and North America.



## 5. FLOODS

The ravages of flood waters can render any location instantly unrecognizable. Whether dry land becomes a river, or a river becomes a nightmare, raging floods let nothing get in their way. Floods are the most common and widespread of all weather-related natural disasters. They are also the most deadly. China's Yellow River flood in 1887 claimed 900,000 lives, the Huang He floods in 1931 killed four million, and the worst flood in US history, the infamous Johnstown Flood of 1889, killed 2,209 people. 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. 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. On average, flash floods kill more people each year, than hurricanes, tornadoes and lightning combined. In this episode, we'll study the science behind this most deadly force of nature and meet with flood experts in France, the U.S. and parts of Asia, where monsoon rains can wipe out homes, bridges and entire villages in just minutes.



## 6. DROUGHTS

No rain, no life. That's the basic rule of survival on earth. 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. "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 main categories of drought: Meteorological, Agricultural, and Socio-economic. This occurs when the demand for water exceeds supply. We'll also ask such difficult questions as whether or not it's ethical to seed clouds to produce rain. And we'll explore one of the disastrous consequence of droughts – Fire. We'll look at the fires that ravaged Australia throughout 2019. And we'll investigate the Paradise Fire in Northern California, speaking with Brock Long, the former head of FEMA and Chris O'Neill, the ultimate fire chaser and videographer.





## 7. TSUNAMIS

The ocean is a mighty force with a destructive potential we tend to forget when it dutifully stays within its familiar limits at beach and harbor. But fueled by an offshore earthquake or underwater volcanic eruption, a tsunami can surge from the ocean's confines, wreaking death and destruction when it crashed onto shore. 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, capable of destroying almost everything that comes their way. They're unpredictable, and they can carry 20-ton rocks as far as 180 meters 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. In this episode, we meet with scientists in Japan, Europe and the U.S. who are studying the science behind tsunamis and developing warning systems that will best help the public survive these deadly forces of nature.



## 8. THUNDERSTORMS AND LIGHTNING

There are about 2,000 thunderstorms taking place on Planet Earth at any given time. Despite their exhilarating beauty, they can be deadly. Given the right conditions, these storms can easily evolve into supercells which can then produce hurricanes and tornadoes. Yet even on their own, thunderstorms unleashed can cause a myriad of hazardous conditions including flash floods, hail the size of softballs, and lightning. On average, more people are killed each year by lightning, than by tornadoes. There are around 8 million lightning strikes per day; each one of them heating the surrounding air to 30,000 degrees Celsius. That's five times hotter than the surface of the sun! In general, thunderstorms and lightning develop during the warmer months of spring, summer and autumn, but they can occur at any time of the year. And their numbers are increasing worldwide, especially in Africa, as global temperatures continue to rise. In this episode, we'll meet with Jeff Peters, a meteorologist and lightning safety expert for NOAA who has devoted most of his career to the protection of life and property from severe storms.







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